Small Arms
Integration Book

Prepared: 18 Aug 2000

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WARNINGS

AN/PAQ-4B/C Light, Aiming, Infrared

The AN/PAQ-4B/C is a military laser and has been exempted from FDA radiation safety performance standards prescribed in the Code of Federal Regulations, Title 21 Chapter I, Subchapter J, pursuant to exemption No. 76 EL-01 DOD issued on 7-26-76. These devices must be used IAW the precautions contained in this manual.

The infrared beam is considered eyesafe based on military standards. Suitable precautions must be taken to avoid overexposure to the infrared beam.

- Do not stare into the infrared laser beam
- Do not look into the infrared laser beam through binoculars or telescopes.
- Do not shine the infrared laser beam into mirror surfaces.
- Do not shine the infrared laser beam into other individual's eyes.

Risk of Detection by Enemy: To reduce the risk of detection by an enemy wearing NVGs (Night Vision Goggles), avoid prolonged activation of teh IAL (Infrared Aiming Light) prior to firing.

The infrared beam is more detectable to an enemy using NVGs when shining through smoke, fog and rain. Avoid prolonged activation of the Aiming Light in these conditions.

AN/PEQ-2A Laser Pointers/Illuminators

Invisible Laser Radiation – Avoid Direct Exposure to the Beam

The AN/PEQ-2A makes use of a high power aiming laser and presents a serious eye hazard within 25 meters, when used in the training mode, and within 220 meters, when used in the tactical mode. A safety block installed in the training mode (Blue Side Up) prevents teh operator from accessing the

non eyesafe modes (AIM HI, DUAL LO/HI, DUAL HI/HI). A .050 hex head allen wrench is needed to unscrew teh block from the body and re-install it in the tactical mode (Black Side Up). Tactical mode should not be used unless authorized by the unit's commander.

- Do not stare into the infrared laser beam
- Do not look into the infrared laser beam through binoculars, telescopes or 3x Extenders.
- Do not point the infrared laser beam at mirror like surfaces.
- Do not shine the infrared laser beam into other individual's eyes.

<u>Risk of Detection by Enemy</u>

- To reduce the risk of detection by an enemy using Night Vision Devices, avoid prolonged activation of the AN/PEQ-2A.
- The infrared beam is more detectable to an enemy using Night Vision Devices when used in smoke, fog and rain. Avoid prolonged activation of the AN/PEQ-2A in these conditions.

- Make sure the weapon is CLEAR and on SAFE before proceeding.
- Do not store the AN/PEQ-2A with batteries installed.
- Do not over adjust the adjusters.

AN/PAS-13 Thermal Weapon Sight (H/MTWS)

- If operated with eyecup missing, light emitting from eyepiece may be visible to enemy night vision devices.
- Do not install a BA-5847 Lithium Sulfur Dioxide battery in the battery compartment. Cover may rupture or fragment, causing serious injury in the event of battery venting.

- DO NOT crush, puncture or otherwise mutilate battery. Avoid bringing battery into contact with water. Turn battery in to unit maintenance for disposal in accordance with unit standard operating procedures (SOP).
- The AN/PAS-13 (H/MTWS) uses a primary (non-rechargeable battery) BA-5347/U battery or secondary (rechargeable) BB2847/U battery. NEVER attempt to change a non-rechargeable battery. To do so, may cause the battery to leak or vent.
- Ensure weapon is not loaded and safety is on before installing and removing bracket/Thermal Weapon Sight (AN/PAS-13 (H/MTWS)) to and from weapon. A loaded weapon may accidentally discharge, causing injury or death.
- Ensure safeties are in place before sight aligning weapon. Weapon may accidentally discharge, causing injury or death.
- Remove eye from eyecup before firing MK19 Grenade Machine Gun. Recoil of MK19 may cause injury to personnel.
- DO NOT touch, ingest or inhale particles of a broken lens. Lens contains germanium, which is slightly toxic if ingested or inhaled. Glass may be sharp enough to cut personnel if touched.
- Isopropyl alcohol is flammable and toxic. To avoid injury, keep away from open fire and use in a well-ventilated area.

AN/PVS-4 Night Vision Sight

- Rain, fog, sleet, snow, smoke, and other reflective matter impair the sight effectiveness.
- DO NOT use without eye-guard attached or weapon recoil may cause personal injury.
- Extreme care should be taken to see that no stray light is visible from sight when in operation (to prevent detection by the enemy).
- The batteries used in sight require special handling to avoid possible physical harm or equipment damage. Return all used or damaged batteries to Property Disposal.

- The BA-5567/U (LITHIUM) battery contains sulfur dioxide gas under pressure and should be handled in the following manner:
    1. If the battery compartment becomes hot to touch and you hear a hissing sound (i.e. battery venting) or smell irritating sulfur dioxide gas, IMMEDIATELY turn off the equipment. Wait until battery has cooled before removing it.
    2. DO NOT heat, puncture, disassemble, and test for capacity short circuit, attempt to recharge, or otherwise tamper with battery.
    3. Batteries have a safety vent to prevent explosion. When they are venting gas, you will smell gas, your eyes may become irritated, or you may hear the sound of gas escaping. When safety vents have operated, batteries are fairly safe from bursting, but will be hot and must be handled with care.
    4. DO NOT open plastic storage bag if cardboard box inside bag is stained or there is liquid visible inside bag.
    5. The Lithium battery has a black band around the top and bottom of plastic sleeve. The lithium battery must be disposed of in accordance with local regulations.
    6. DO NOT use batteries, which look bulged or have burst. Turn these batteries in to the Property Disposal Office. Contact your unit safety officer for help with large quantities of bulged or burst batteries.
    7. DO NOT use water to extinguish lithium battery fire if a shock hazard exists due to high voltage electrical equipment in the immediate vicinity (i.e., greater than 30 volts, alternating current (ac) or direct current (dc).
    8. **DO NOT** use two lithium batteries in the sight at the same time.
- The image intensifier phosphor screen contains toxic materials.
- A broken image intensifier may be caused from damage to the sight, especially if the sight housing is cracked by force.

- If an image intensifier breaks, be extremely careful to avoid inhaling the phosphor screen material. Do not allow the material to come in contact with the mouth or open wounds on the skin.
- If the phosphor screen material contacts your skin, wash it off immediately with soap and water.
- If you inhale/swallow any phosphor screen material, drink a lot of water, induce vomiting, and seek medical attention as soon as possible.

AN/PVS-10, Sight, Night Vision Sniper Scope (SNS)

- DO NOT leave the lens caps open when SNS is not in use. This may permit detection by the enemy.
- Remove air pressure inside shipping/storage case by pressing pressure relief valve located near carrying handle before opening the case.
- DO NOT mix alkaline and lithium batteries. Failure to comply may result in injury or death.
- Insure that **only 1.5V batteries** are used. Use of 3.0V batteries may result in injury or damage to the sight. **DO NOT use 3.0V batteries**.
- DO NOT disassemble the SNS, or personal injury and equipment damage may result.
- DO NOT use the sight without eye-guard attached or personal injury from weapon recoil may result.

AN/PVS-14 Monocular Night Vision Device

- The image intensifier's phosphor screen contains toxic materials.
    1. If an image intensifier breaks, be extremely careful to avoid inhaling the phosphor screen material. Do not allow the material to come in contact with the mouth or open wounds on the skin.
    2. If the phosphor screen material contacts your skin, wash it off immediately with soap and water.

3. If you inhale/swallow any phosphor screen material, drink a lot of water, induce vomiting, and seek medical attention as soon as possible.

- The IR source is a light that is invisible to the unaided eye for use during conditions of extreme darkness. However, the enemy using night vision devices can detect the light from the illuminator.

AN/TVS-5, Night Vision Sight

- DO NOT press eye-guard except with eye area of face for operation of sight. Sight emits illumination that can be detected by enemy if used improperly.
- DO NOT use sight without eye-guard attached or personal injury from weapon recoil may result.
- A lithium-sulfur dioxide (Li-SO2) battery used with the AN/TVS-5 contains pressurized sulfur dioxide (SO2) gas. The gas is toxic, and the battery MUST NOT be abused in any way which may cause the battery to rupture.
- DO NOT heat, short circuit, crush, puncture, mutilate, or disassemble batteries.
- DO NOT USE any battery, which shows signs of damage, such as bulging, swelling, disfigurement, brown liquid in the plastic wrap, a swollen plastic wrap, etc.
- DO NOT test LiSO2 batteries for capacity.
- DO NOT recharge Li-SO2 batteries.
- DO NOT use water to extinguish Li-SO2 battery fires if a Shock hazard exists due to high voltage electrical equipment in the immediate vicinity [i.e., greater than 30 volts, alternating current (ac) or direct current (dc)].
- If the battery compartment becomes hot to the touch, if you hear a hissing sound (i.e., battery venting), or smell irritating sulfur dioxide gas, IMMEDIATELY turn off the equipment. Remove the equipment to a well-ventilated area or leave the area.
- DO NOT use a Halon type fire extinguisher on a lithium battery fire.

- In the event of a fire, near a lithium battery(ies), rapid cooling of the battery(ies) is important. Use a carbon dioxide (CO_2) extinguisher. Control of the equipment fire, and cooling, may prevent the battery from venting and potentially exposing lithium metal. In the event that lithium metal becomes involved in fire, the use of a graphite based Class D fire extinguisher is recommended, such as Lith-X or MET-L-X.
- DO NOT store lithium batteries with other hazardous materials and keep them away from open flame or heat.
- In the event of contact with the eyes, immediately flush the eyes with water and continue to flush for 15 minutes.
    1. The first few seconds after contact are critical and immediate flushing of the eyes may prevent permanent damage.
    2. An eyewash fountain is preferred, but an eyewash hose or any other water source should be used in an emergency
    3. Alkali (base) burns are usually more serious than acid burns
    4. Strong chemicals burn the skin rapidly. There is no time to waste. Flush the area with water immediately. Remove and discard clothing, socks and shoes (obtain other clothes and shoes). Continue to flood the area, while clothing is being removed.

M68 Close Combat Optic (CCO)

At higher intensity settings, red dot is visible through front of sight. For night vision operations, close front lens cover before turning rotary switch to position 1 or 2. Check light for proper intensity before opening front lens cover. Close front lens cover before turning rotary switch counterclockwise to the OFF position. Failure to follow this warning could reveal your position to your enemy.

M145 Telescope, Machine Gun Optics (MGO)

- Removal of the anti-reflection device (ARD) could lead to your detection by the enemy.
- Use of the M145 Straight Telescope without laser filter is not eye-safe.

- Ensure the reticule illumination is turned to the OFF position when not required.
- Removal of the anti-reflection device (ARD) could lead to your detection by the enemy.
- Removing the laser filter could result in the loss of your eyesight.

General Warnings

If devices are to be secured to the weapon by additional means (i.e. tape, rubber bands, etc.) insure that the device is fully secured in its final configuration prior to conducting zeroing of the device to the weapon. Failure to do so will result in an invalid zero and the firer's inability to successfully engage targets.

When handling any weapon always insure that the weapon has been cleared.

Periodically check the weapon mount to insure that it has not loosened during transportation or operation.

Notes

- There are four different rail grabber/mounts in the inventory.
  - Small Rail grabber/mount (For AN/PAQ-4B/C, AN/PEQ-2A & M204 Leaf Sight)
  - Large Rail grabber/mount (For AN/PVS-4)
  - TWS Rail grabber/mount (For AN/PAS-13, TWS)
  - AN/PSX-1 (CIDDS) Rail grabber for AN/PSX-1

PREFACE

This document is intended as a Leader's Guide and quick reference for the soldier in the field. It is our intent to provide a clear, easy-to-use document that outlines interface requirements between weapons, their accessories and sights. **This is a reference book and not intended to replace Technical Manuals**. Moreover, the information contained in this booklet provides baseline configurations for the weapons and accessories covered. There are a wide variety of variations possible, but only the baseline configurations will be discussed in this document. Detailed procedures and guidance on the operation and employment of these devices is contained in the appropriate Technical Manual. (See Annex A – References)

This book has been prepared using the most up-to-date data available and in some instances varies from the information available in fielded Technical Manuals. When in doubt as to what configuration should be used contact the below listed point of contact for further guidance:

Commander
United States Army Infantry School
ATTN: ATZB-CDE
Fort Benning, GA 31905-5400

Telephone: DSN 835-4952
COMM 706-545-4952

Feel free to disassemble this booklet and to reproduce those items required for training or operations. The booklet has been formatted to specifically enhance your ability to reproduce the information contained within.

HOW TO USE THIS BOOKLET

Organization:

- The Small Arms Integration Book is organized into Weapon Chapters (M16A2, M4/M4A1, Modular Weapon System (MWS), M24, M249, etc.), with sections for each of the components or sights contained in that chapter.
- Each chapter starts with an overview photo of the weapon with all applicable Sights and Accessories depicted. Lines indicate the general location of that item on the weapon.
- Following the overview picture you will find sections for each of the components or accessories associated with that weapon (AN/PAQ-4B/C, AN/PEQ-2A, AN/PVS-4, etc.).
- Within a given section you will find a diagram and instructions explaining how to mount or install the item on the weapon. Next you will find 25 meter zero targets and 10 meter bore light.
- Annexes contained at the rear of this booklet include:
    - A list of References (Annex A)
    - Accessory/Component Operating Instructions (Annex B)
    - Modular Weapon System Description (Annex C)
    - Battery Quick Reference Guide (Annex D).
    - Airborne/Air Assault, Light and Mechanized Infantry Platoon Organization/Equipment Diagrams (Annex E)
    - Borelight Alignment Procedure (Annex F)
    - Target Offset Summary (Annex G)
    - Acronyms and Abbreviations (Annex H).

Instructions:

1. Locate your weapon in the Table of Contents.
2. Locate the Sight or Accessory that you are attempting to mount or install below that weapon then turn to the designated page.
3. Follow the instructions provided to install the Sight or Accessory. Use the diagram to the left of the instructions to assist in your installation.
4. When preparing to qualify or familiarize with a Sight or Accessory refer to the appropriate 25-meter zero target or Boresight target for correct preparation/configuration of the target for that weapon/accessory combination.
5. If a confirmed boresight target is available (as indicated on the enclosed boresight targets) the firer may omit the requirement to conduct a 25-meter live fire zero confirmation for the AN/PEQ-2A and the AN/PAQ-4B/C. If however the firer is zeroing an AN/PAS-13, Thermal Weapon Sight, or M68, Close Combat Optic, he must conduct a 25-meter live fire confirmation to ensure proper mounting and alignment of the weapon/sight.

INTEGRATION MATRIX

A checkmark indicates that the accessory or sight listed in the left-hand column is applicable to the weapon listed at the top of the table.

Accessory	M16 A1/ A2	M16/ M203	M4/A 1	M4/ M203	MWS (Note 1)	MWS M203	M24
AN/PAQ-4B/C	✓	✓ (Note 2)	✓	✓ (Note 2)	✓	✓	
AN/PAS-13, TWS	✓		✓		✓		
AN/PEQ-2A	✓		✓		✓		
AN/PVS-4(A)	✓	✓	✓	✓	✓	✓	
AN/PVS-10, SNS							✓
AN/PVS-14					✓		
AN/TVS-5	✓						
M68, CCO	✓		✓		✓		
M145, MGO							
BIS			✓	✓	✓	✓	
MILES	✓	✓	✓	✓	✓	✓	✓
AN/PSX-1, CIDDS (Note 5)	✓	✓	✓	✓	✓	✓	

Note 1 – MWS-Modular Weapon System (MWS) is a generic term that is applied to either a M4 Carbine with the M4 Adapter Rail System installed, or a M16A4 Rifle with the M5 Adapter Rail System installed.

Note 2 - When mounting the AN/PAQ-4B/C to the M203 the Grenadier must first have the Quadrant Sight removed.

INTEGRATION MATRIX (CREW SERVED WPNS)

Accessory	M249	M60	M240B	M2	MK19
AN/PAQ-4B/C	✓	✓ (Note 3)	✓ (Note 3)		
AN/PAS-13, TWS	✓	✓	✓	✓	✓
AN/PEQ-2A	✓	✓	✓	✓	✓
AN/PVS-4(A)	✓	✓	✓		
AN/PVS-10, SNS					
AN/PVS-14					
AN/TVS-5				✓	✓
M68, CCO					
M145, MGO	✓ (Note 4)	✓	✓		
BIS					
MILES	✓	✓	✓	✓	
AN/PSX-1, CIDDS (Note 5)	✓		✓	✓	✓

Note 3 – Objective configuration would be with the AN/PEQ-2A, however, the AN/PAQ-4B/C may be used if the AN/PEQ-2A is unavailable.

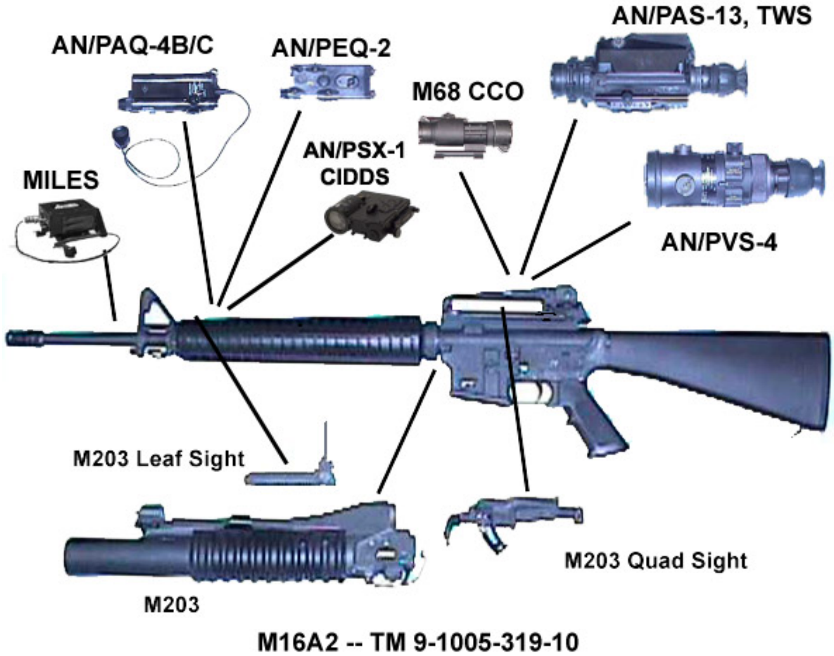
Note 4 – The MGO will be used on the M249 only when the M249 is employed in the Light Machine Gun role.

Note 5 - The AN/PSX-1 will replace the AN/PAQ-4B/C once the AN/PSX-1 device has been fielded.

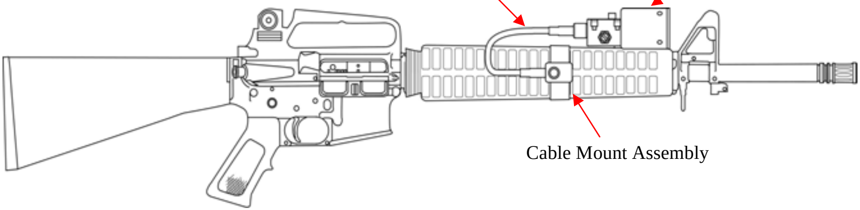
TABLE OF CONTENTS

INDIVIDUAL WEAPONS

M16A2 System Diagram



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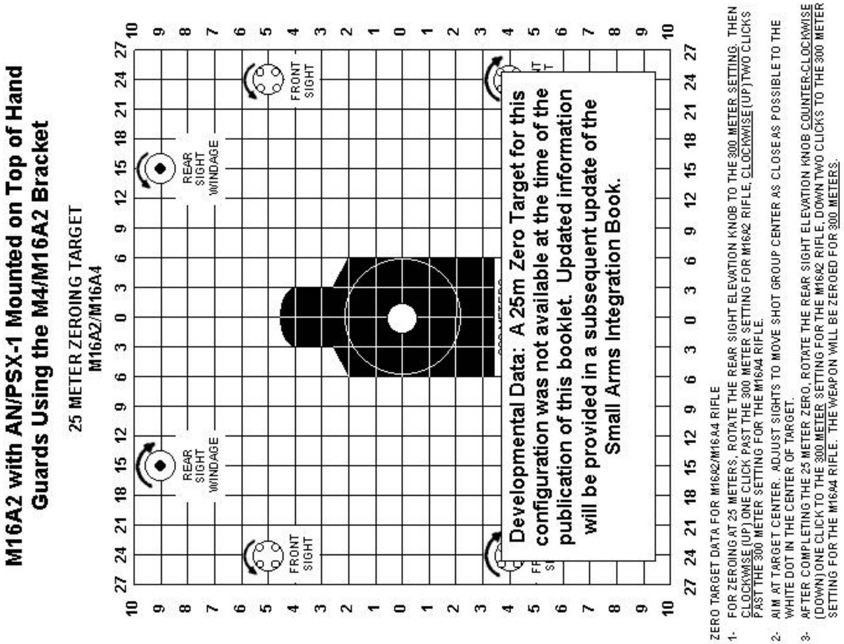


M16A2 – AN/PSX-1 Interrogator Set Mounting Instructions

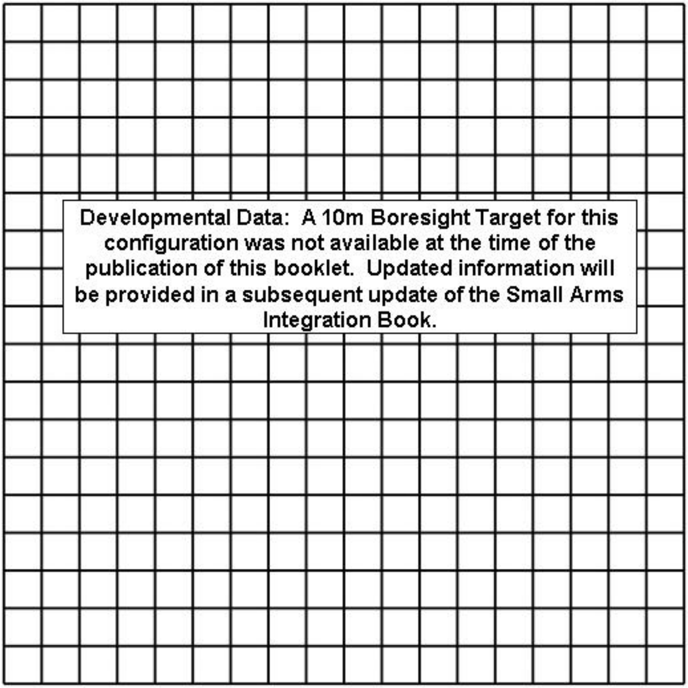
The AN/PSX-1 Interrogator Set is mounted to the M16A2 utilizing Bracket Assembly (Part No. A3259265, NSN 5855-01-446-9545) and AN/PSX-1 (CIDDS) Mounting Rail (Part No. 6451509).

1. Install AN/PSX-1 (CIDDS) Mounting Rail (Part No. 6451509) on barrel clamp posts extending through top hand guard. (**Note**: Unit armorer installs barrel clamp.)
2. Secure the AN/PSX-1 to the rail with the rail grabber-clamping knob
3. Using AN/PSX-1 (CIDDS) cable mount assembly (Part No. 6451530), attach cable to back of AN/PSX-1 and cable brackets to preferred side of weapon handguard.

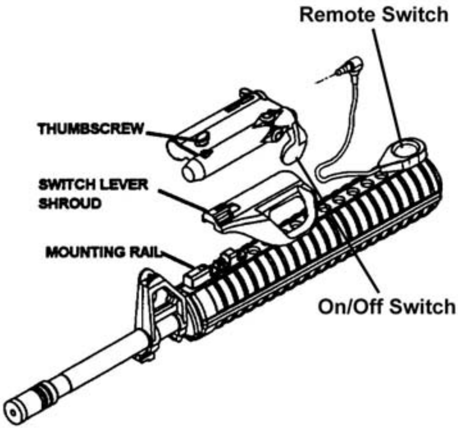
M16A2—AN/PSX-1 (CIDDS) Zero and Boresight Targets



10 Meter Boresight Tgt-AN/PSX-1 Mtd on Top of M16A2
Using the M4/M16A2—AN/PAQ-4B/C Barrel Bracket



Grids are 1cm wide by 1cm high. Units must locally manufacture.



M16A2 – AN/PAQ-4B/C Mounting Instructions

The AN/PAQ-4B/C is mounted to the M16A2 using the M4/M16A2 Bracket Assembly, Part No. A3186958, NSN 5340-01-390-38112. The Bracket Assembly (comprising the bracket and bracket caps, hidden under hand guards, and the mounting rail) may only be installed by the a Small Arms Repairman MOS 45B.

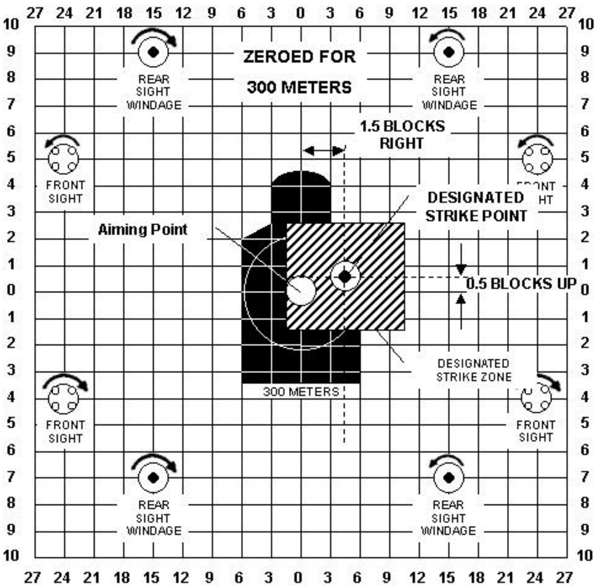
1. Install mounting rail through top hand guard to barrel mounting bracket. (Note: Unit armorer installs mounting bracket.)
2. Place the switch lever shroud over the mounting rail.
3. Secure the AN/PAQ-4B/C to the rail with the thumbscrew.
4. Attach the remote switch, at a comfortable location, using the provided cable hangers

NOTE

When mounting the AN/PAQ-4B/C in conjunction with a MILES device a Training Extender (Part No. A3267739) must be attached to the mounting rail before attaching the AN/PAQ-4B/C. This allows the laser beam to clear the MILES device.

M16A2 with AN/PAQ-4B/C Mounted on Top of Hand Guards Using the M4/M16A2 Bracket

25 METER ZEROING TARGET
M16A2/M16A4



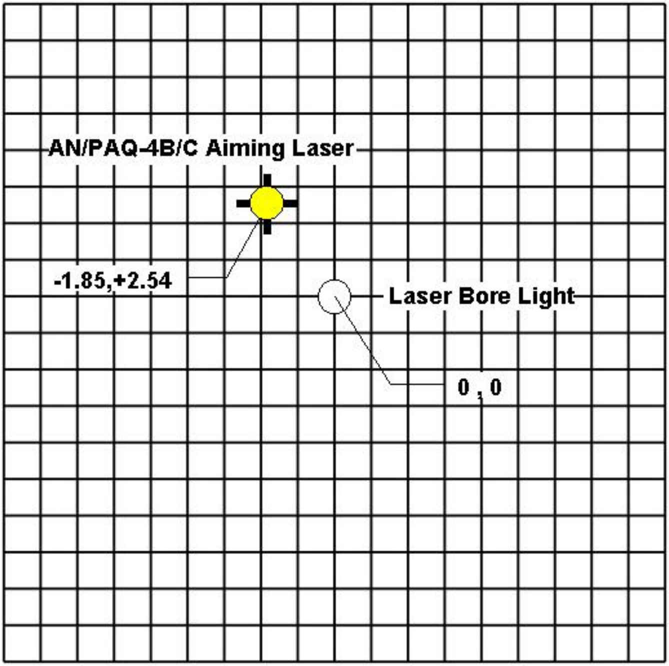
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PAQ-4B/C Mtd on Top of M16A2 Using the M4/M16A2—AN/PAQ-4B/C Barrel Bracket



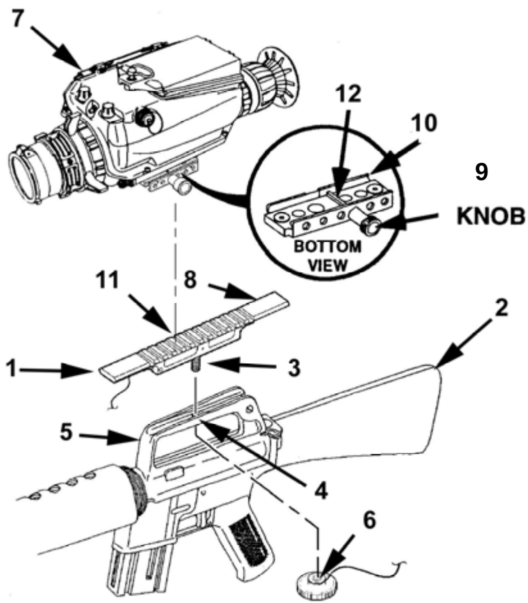
Zero Target Data for M16A2

1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



M16A2 – AN/PAS-13 Mounting Instructions (See Annex B for Target Prep Instructions)

The AN/PAS-13, TWS is mounted to the M16A2 using the M16A2 Bracket Assembly (Part No. 80063-A3170580) IAW TM 11-5855-302-12&P.

Mounting MTWS or HTWS on M16A2 Rifle. Refer to Figure for mounting MTWS or HTWS on the M16A2 rifle.

1. Install M16A2 bracket (1) on weapon handle (5).

NOTE

For the M16A2 rifle, ensure rear sight is lowered (elevation knob turned fully counterclockwise).

a. Place threaded rod (3) of bracket (1) through hole (4) of weapon handle (5).
b. Install thumbwheel (6) on threaded rod (3) and hand tighten.

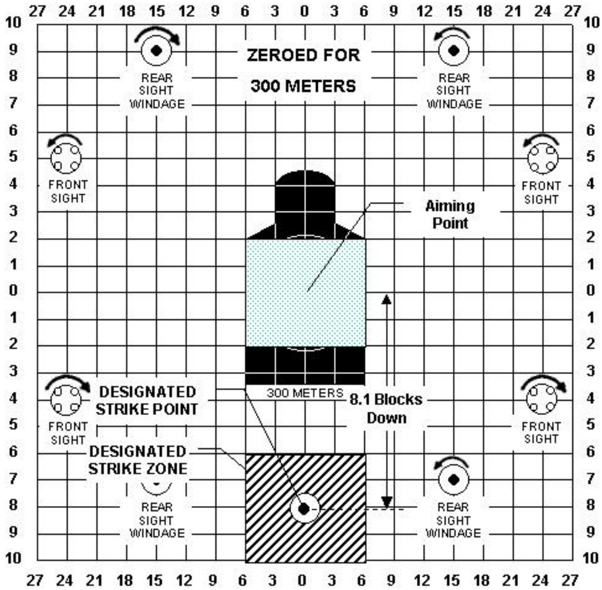
1. Install TWS (7) on rail (8).
    a. Loosen knob (9) on mount (10).
    b. Select slot (11) on rail (8) for mounting. Any slot may be used as long as mount (10) does not hang over edge of rail.
    c. Place bar (12) of mount (10) in slot (11) of rail (8) and hand tighten knob (9) on mount until two clicks are heard.

NOTE: Rail grabber/mount (10) is shown up-side-down in the diagram at left in order to show item 12 more clearly. The rail grabber/mount will normally already be attached to the TWS by the unit armorer prior to the soldier receiving the sight.

M16A2 with AN/PAS-13 Mounted on Carrying Handle with TWS/ M16 Mounting Bracket

25 METER ZEROING TARGET

M16A2/M16A4



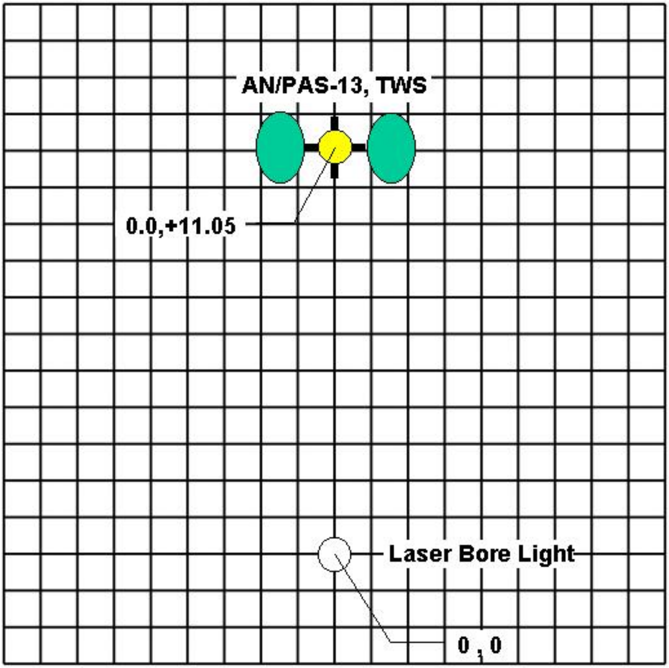
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10 Meter Boresight Tgt-AN/PAS-13 Mtd on M16A2 Carrying Handle with “M16A1/A2—AN/PAS-13” Bracket



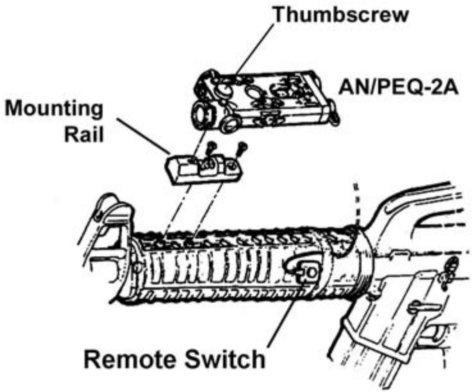
Zero Target Data for M16A2

1. Stabilize Weapon.
2. Place Thermal signature material or tips of fingers on gray circles.
3. Aim between gray circles at cross-hair.
4. Adjust AN/PAS-13 until the borelight laser is centered on its dot.
5. You MUST zero reticle in both wide and narrow field of view.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1 cm wide by 1 cm high. Units must locally manufacture.



Installation of AN/PEQ-2A on M16A2 using M4/M16A2 Mount

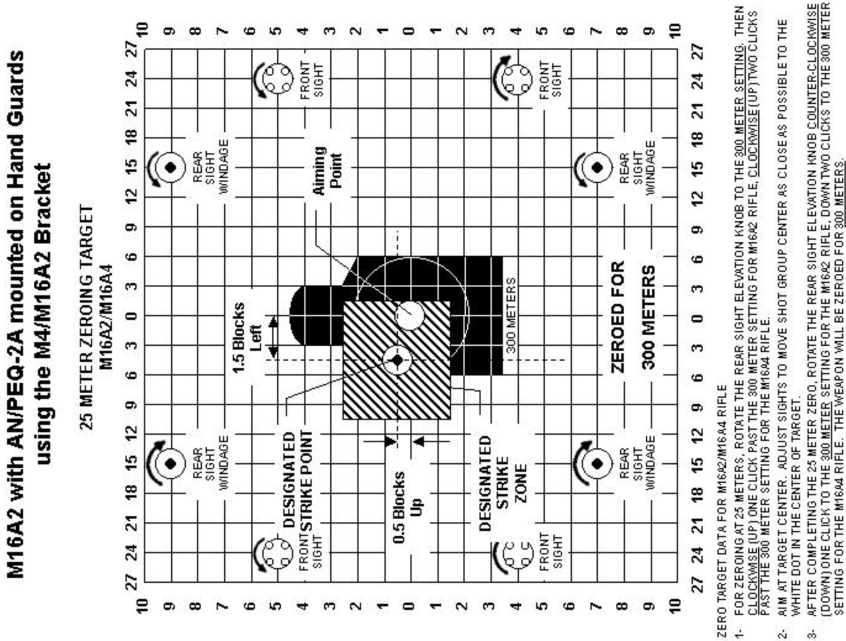
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The AN/PEQ-2A is mounted to the M16A2 using the M4/M16A2 Bracket Assembly, Part No. A3186958, NSN 5340-01-390-38112. The Bracket Assembly (comprising the bracket and bracket caps, hidden under hand guards, and the mounting rail) may only be installed by the a Small Arms Repairman MOS 45B.

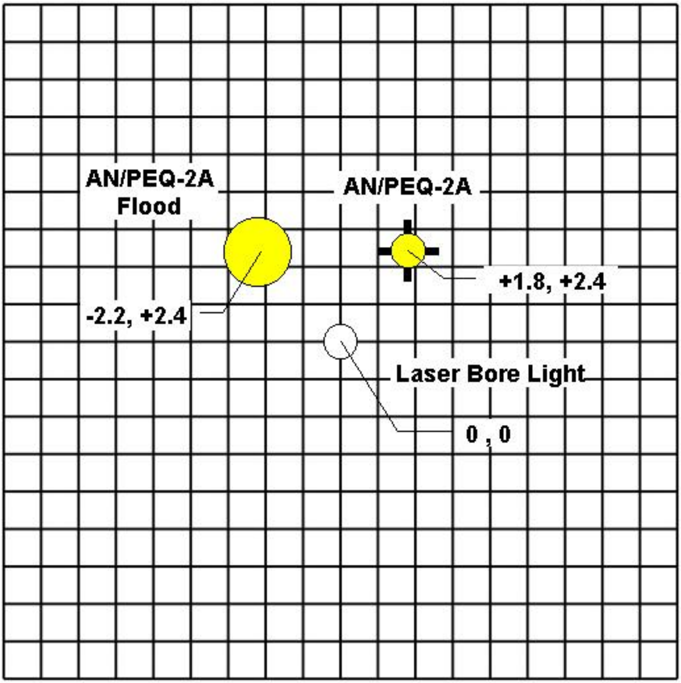
1. Install mounting rail through top hand guard to barrel mounting bracket. (Note: Unit armorer installs mounting bracket.)
2. Secure the AN/PEQ-2A to the rail with the thumbscrew.
3. Attach the remote switch, at a comfortable location, using the provided cable hangers

NOTE

When mounting the AN/PEQ-2A in conjunction with a MILES device a Training Extender (Part No. A3267739) must be attached to the mounting rail before attaching the AN/PEQ-2A. This allows the laser beams to clear the MILES device.


M16A2 with AN/PEQ-2A mounted on Hand Guards using the M4/M16A2 Bracket
25 METER ZEROING TARGET
M16A2/M16A4
REAR SIGHT WINDAGE
REAR SIGHT WINDAGE
1.5 Blocks Left
FRONT SIGHT
DESIGNATED STRIKE POINT
Aiming Point
FRONT SIGHT
0.5 Blocks Up
DESIGNATED STRIKE ZONE
300 METERS
FRONT SIGHT
FRONT SIGHT
REAR SIGHT WINDAGE
ZEROED FOR 300 METERS
REAR SIGHT WINDAGE
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE
1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.
3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PEQ-2A Mtd on M16A2 Hand Guards Using M4/M16A2—AN/PAQ-4B/C Barrel Clamp



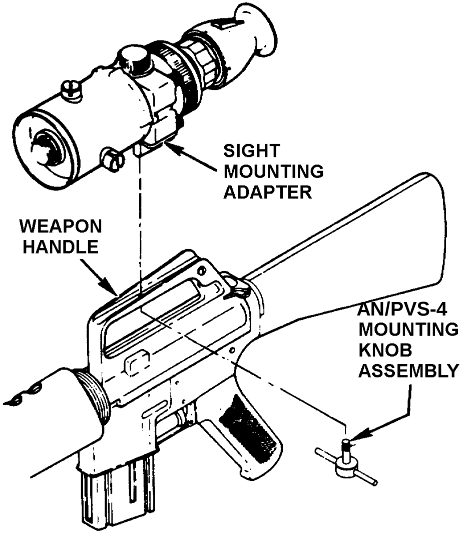
Zero Target Data for M16A2

1. Stabilize Weapon.
2. Align Laser Borelight on it's dot.
3. Adjust AN/PEQ-2A until aiming laser is centered on the dot cross hair.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



NOTE: Insure that you use the correct Mounting Knob Assembly for the M16, not the M60 Knob, which looks very similar.

M16A2 – AN/PVS-4 Mounting Instructions

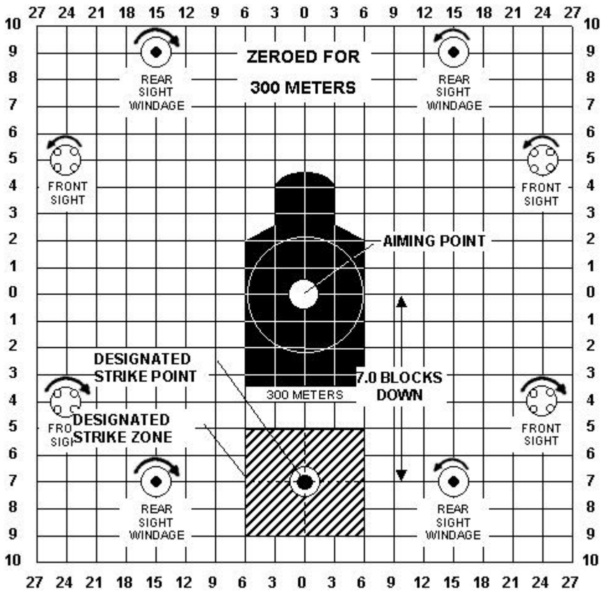
The AN/PVS-4 is mounted to the M16A2 using Mounting Knob Assembly (NSN 5355-01-039-2834) per instructions contained in TM 11-5855-213-10.

1. Position the sight in the groove on top of the carrying handle and align the threaded hole in the base of the sight-mounting adapter over the hole in the handle.
2. Insert the mounting knob assembly in the hole in the handle and turn firmly clockwise into sight mounting adapter.
3. If difficulty is encountered, turn the sight and the rifle upside down. Place the rifle handle onto the sight-mounting adapter, lining up the hole in the handle onto the sight-mounting adapter. Place the mounting knob assembly through the hole in the handle and rotate clockwise.

NOTE: Continually check tightness of mounting knob during weapon firing.

M16A1/A2 with AN/PVS-4 Mounted on Top of Carrying Handle With Mounting Knob Assembly

25 METER ZEROING TARGET
M16A2/M16A4



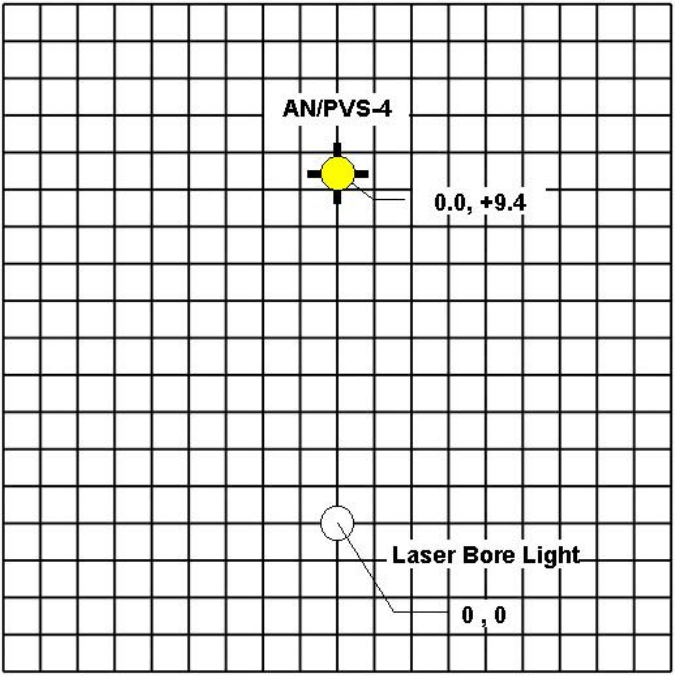
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE <u>300 METER SETTING</u>. THEN <u>CLOCKWISE</u> (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, <u>CLOCKWISE</u> (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB <u>COUNTER-CLOCKWISE</u> (DOWN) ONE CLICK TO THE <u>300 METER</u> SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR <u>300 METERS</u>.

10 Meter Boresight Tgt-AN/PVS-4 Mtd on M16A2 Carrying Handle with Mounting Knob Assembly



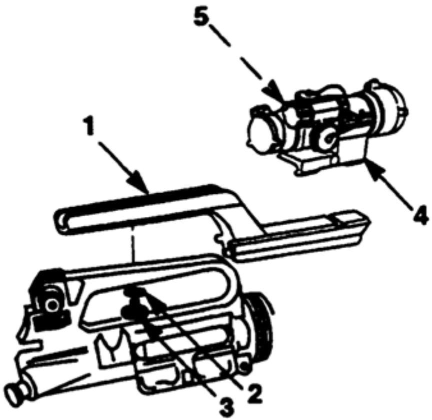
Zero Target Data for M16A2

1. Stabilize Weapon.
2. Aim AN/PVS-4 at Cross Hair and adjust until the borelight strikes the Laser Borelight Dot.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



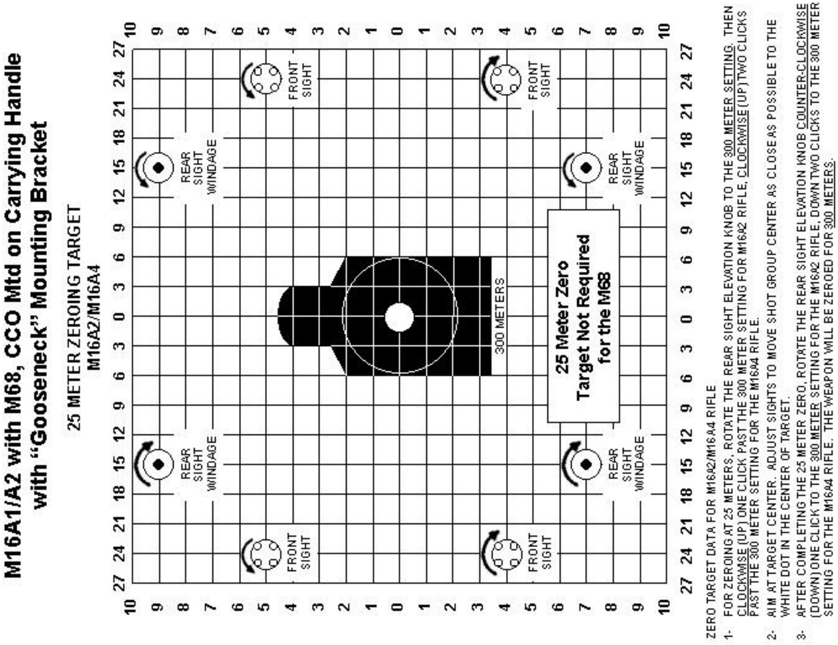
M16A2 – M68, CCO Mounting Instructions

The CCO is mounted to the M16 using sight mount (Components 1,2 and 3) (NSN 1240-01-410-7427) as outlined in TM 9-1240-413-12&P.

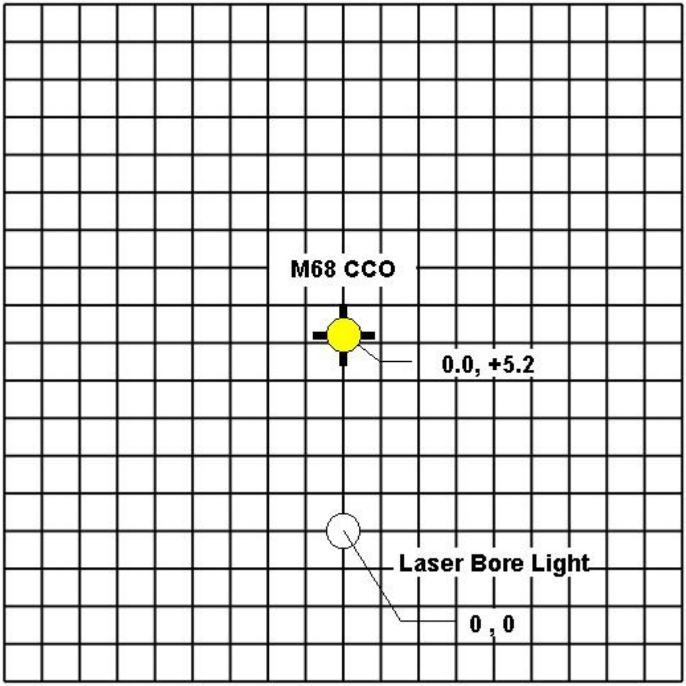
1. The Close Combat Optic is attached to the M16A2 by using the "Gooseneck" rail (1) depicted to the left.
2. Attach the gooseneck mounting bracket to the weapon's carrying handle using O-Ring (2) and mounting bolt (3).
3. Place the CCO (4) atop the mounting bracket.
4. Using the thumbscrew (5, on reverse side of CCO) on the CCO rail grabber/mount attach the CCO to the mounting bracket. Tighten thumbscrew until it snaps two times.

NOTE: The half-moon shaped spacer should not be installed when mounting the CCO to the M16A2.

M16A2—CCO Zero and Boresight Targets



10 Meter Boresight Tgt-M68 CCO Mtd on M16A2 Carrying Handle with "Gooseneck" Mounting Bracket



Zero Target Data for M16A2

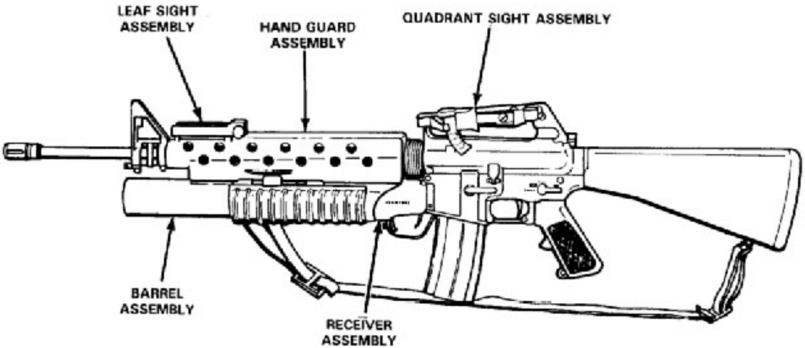
1. Stabilize Weapon.
2. Aim CCO at the dot cross hair.
3. Adjust the CCO until the laser borelight is centered on its dot.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

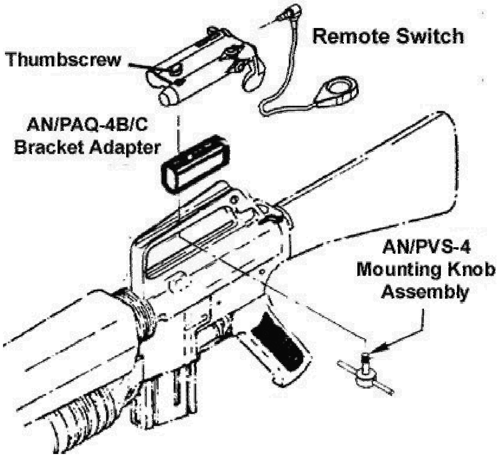
M16A2—M203 Grenade Launcher



M16A2 Grenade Launcher Mounting Instructions

The M203 Grenade Launcher must be mounted to the M16A2 by the unit's armorer IAW TM 9-1010-221-23&P

Individual soldiers should not attempt to either mount or dismount the grenade launcher to the weapon.

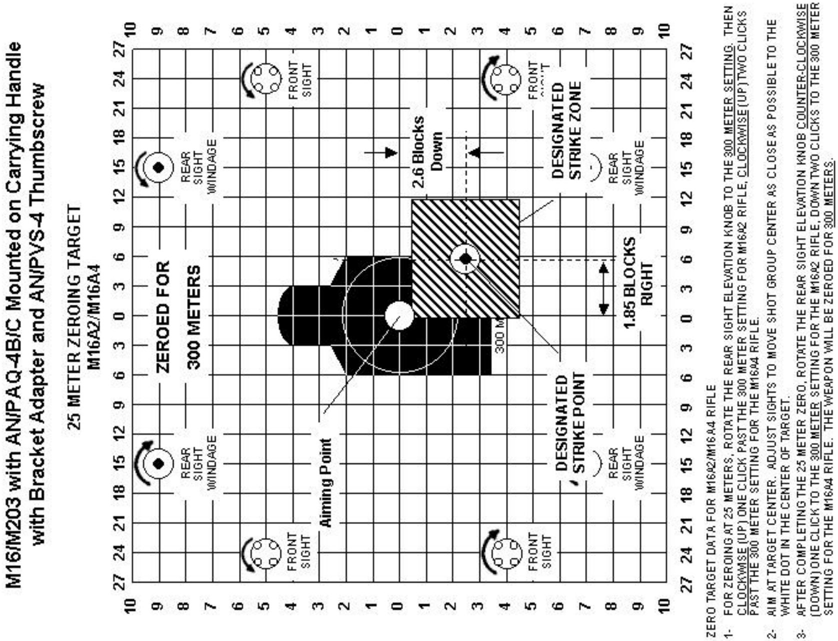


M203 – AN/PAQ-4B/C Mounting Instructions

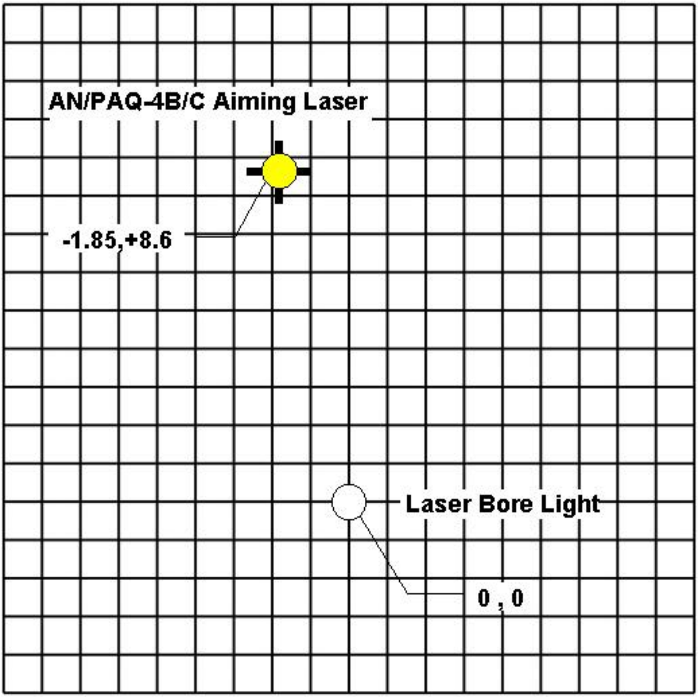
Mounting of the AN/PAQ-4B/C to the M203 is accomplished by using the Mounting Knob Assembly from the AN/PVS-4 Sight (NSN 5355-01-039-2834) and the Bracket Adapter (plastic) from the AN/PAQ-4B/C (NSN 5340-01-362-9873).

1. Attach the AN/PAQ-4B/C Bracket Adapter to the M16A2 carrying handle of the M203 using the AN/PVS-4 Mounting Knob Assembly.
2. Secure the AN/PAQ-4B/C to the Bracket Adapter, using the thumbscrew on the AN/PAQ-4B/C.
3. Attach the remote switch to the AN/PAQ-4B/C and locate the switch at a convenient location.
4. Both the laser designator and quadrant sights **can not** be mounted at the same time.

M16/M203—AN/PAQ-4B/C Zero and Boresight Targets



10 Meter Boresight Tgt-AN/PAQ-4B/C Mtd on M16/M203 with AN/PAQ-4B/C Bracket Adapter and AN/PVS-4 Mounting Knob



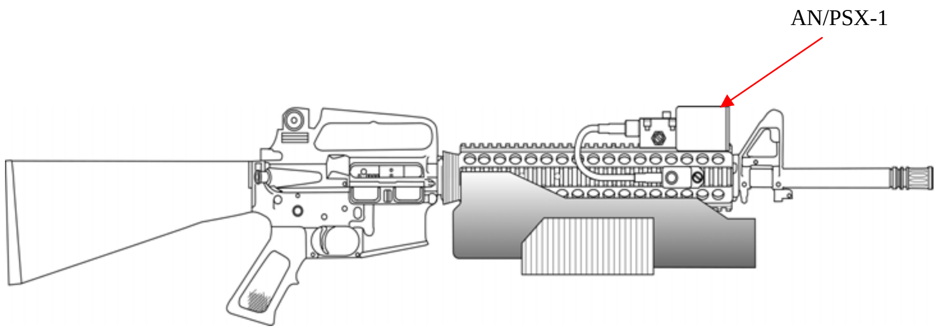
Zero Target Data for M16/M203

1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



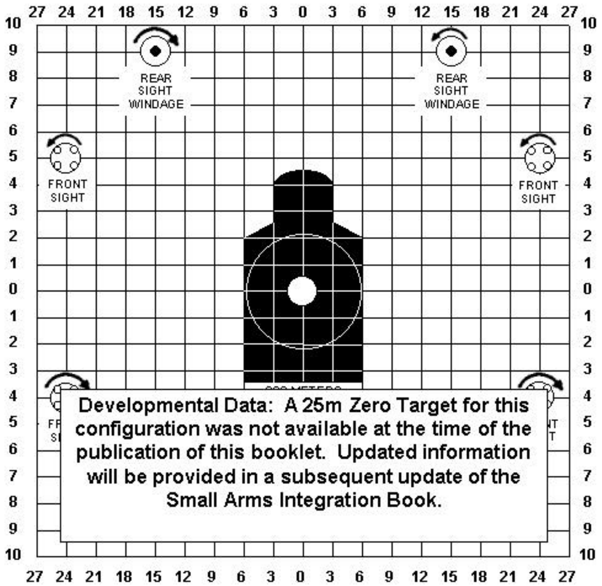
M16/M203 - AN/PSX-1 Interrogator Set Mounting Instructions

The AN/PSX-1 Interrogator Set requires the installation of the M5 Adapter Rail System (ARS), Part No. 12973002, NSN 1005-01-451-6771 to the M16/M203.

1. Remove the M16 handguard and replace with M5 ARS.
2. Secure the AN/PSX-1 to the rail with the rail grabber-clamping knob.
3. Attach AN/PSX-1 (CIDDS) Activation Control Cable (Part No. 6451510-1) to back of AN/PSX-1 with interrogator switch on preferred side of RAS.

M16A2/M203 with AN/PSX-1 Mounted on Upper Rail of M5 Adapter Rail System

25 METER ZEROING TARGET
M16A2/M16A4



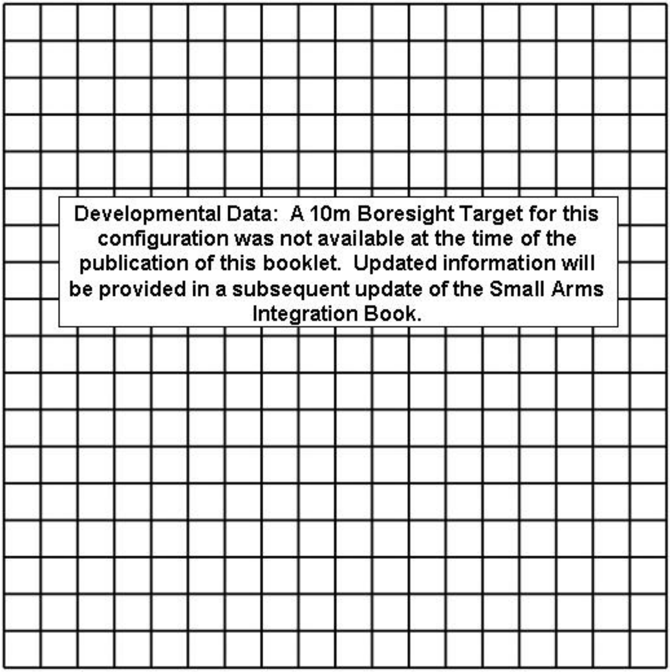
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

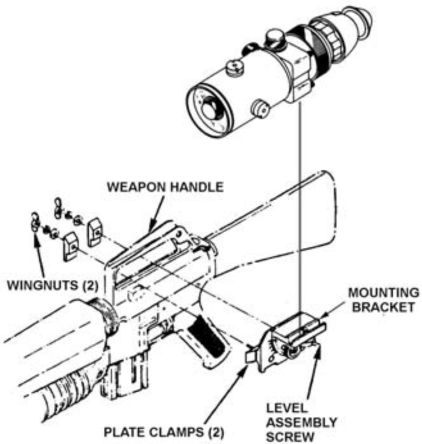
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt, M16A2/M203—AN/PSX-1 Mtd on M5 Adapter Rail System, Upper Rail



Grids are 1cm wide by 1cm high. Units must locally manufacture.



M203 – AN/PVS-4 Mounting Instructions

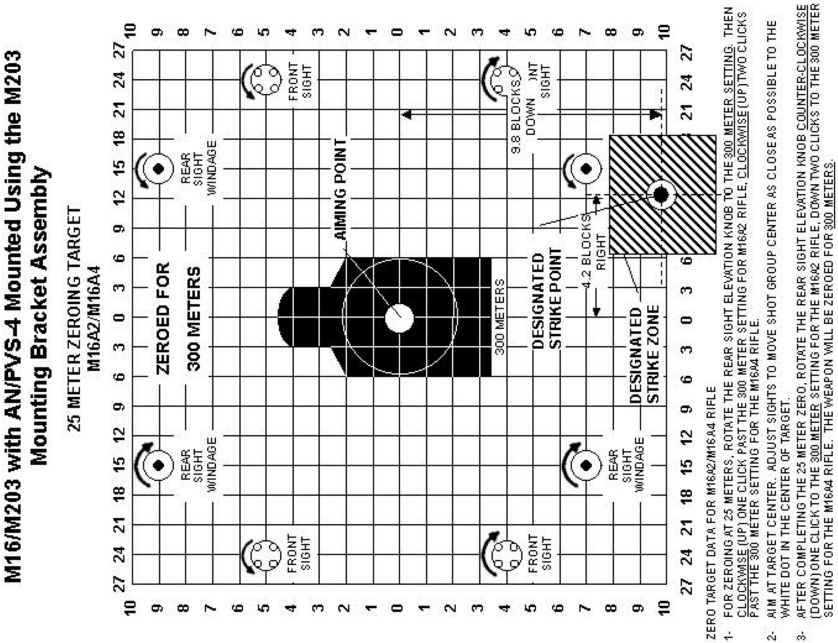
The AN/PVS-4 is mounted to the M203 using Mounting Bracket Assembly (NSN 5855-01-039-2835) IAW TM 11-5855-213-10.

NOTE

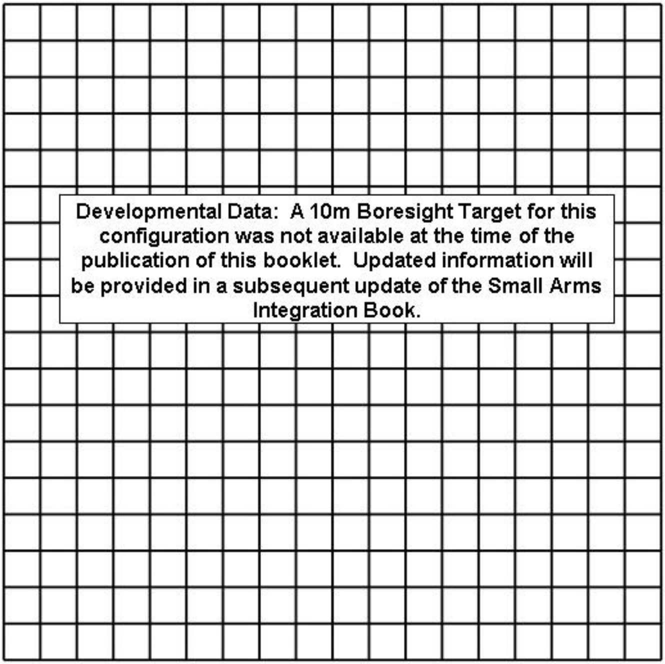
Wingnuts, flat washers and clamp plate cannot be removed.

1. Remove the grenade launcher quad sight, if installed (Refer to TM 9-1005-249-10).
2. Position the mounting bracket assembly on the left side of the rifle so that the two clamp plates project through the opening under the handle; wingnuts should be fully loosened.
3. Turn the clamp plates so that the pointed ends are in the up position and seated against the handle.
4. Tighten the wingnuts clockwise until the mounting bracket is secured firmly to the weapon.
5. Position the sight in the groove on top of the bracket and align the threaded hole in the base of the sight mounting adapter with the lever screw assembly. Tighten the screw firmly clockwise to secure the sight to the bracket.
6. Set the bracket range to coincide with the target distance.

M16/M203—AN/PVS-4 Zero and Boresight Targets

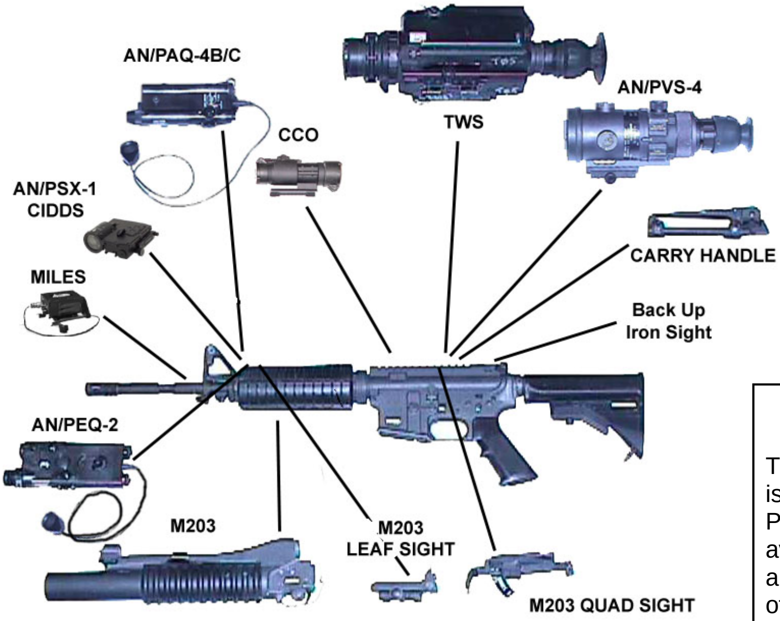


10 Meter Boresight Tgt-AN/PVS-4 Mounted on M16/M203 with M203—AN/PVS-4 Mounting Bracket



Grids are 1cm wide by 1cm high. Units must locally manufacture.

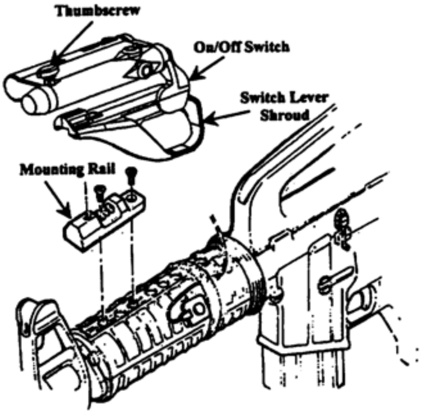
M4/M4A1 System Diagram



M4/M4A1 -- TM 9-1005-319-10

NOTE

The Back Up Iron Sight is a developmental item. Photos are not currently available. Photos will appear in a future edition of the Small Arms Integration Book.



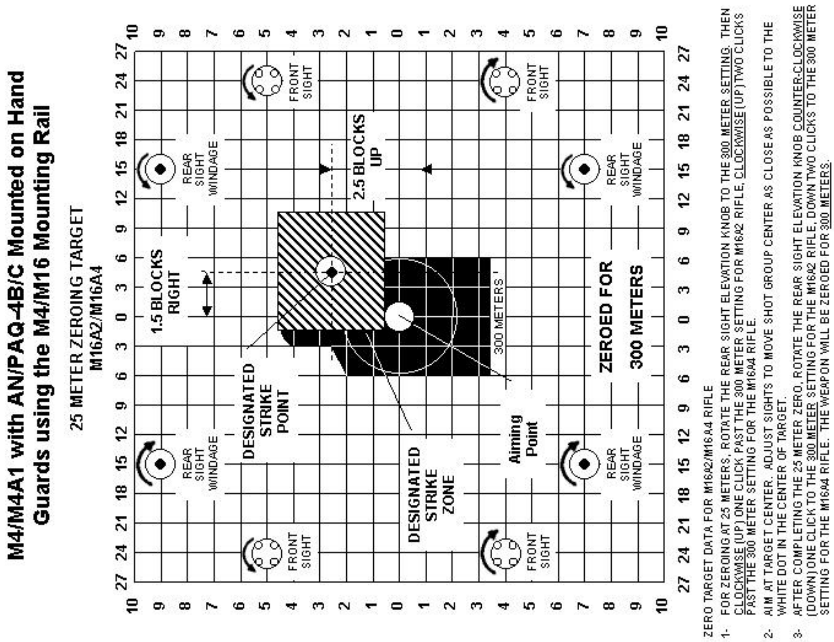
M4/M4A1 – AN/PAQ-4B/C Mounting Instructions

The AN/PAQ-4B/C is mounted to the M4 using the M4/M16A2 Bracket Assembly, Part No. A3186958, NSN 5340-01-390-38112. The Bracket Assembly (comprising the bracket and bracket caps, hidden under hand guards, and the mounting rail) may only be installed by a Small Arms Repairman MOS 45B.

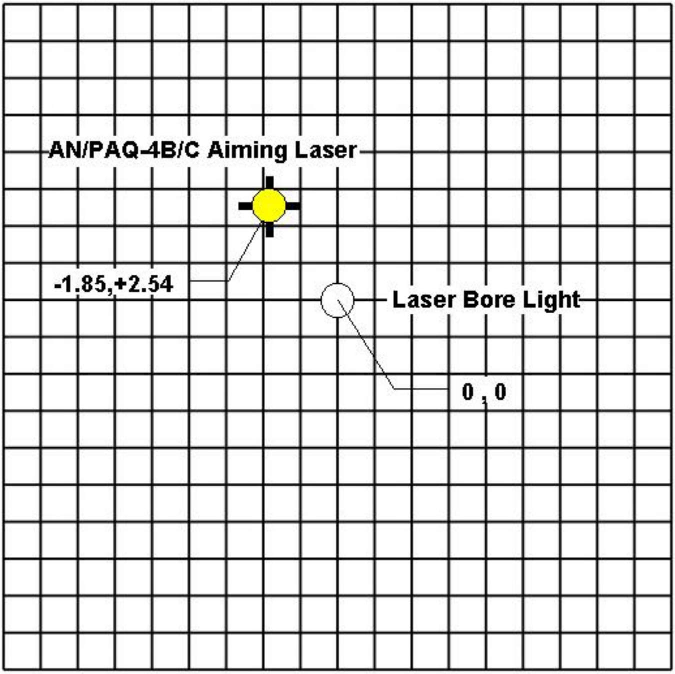
1. Install mounting rail through top hand guard to barrel clamp. (Unit Armorer Installed.)
2. Place the switch lever shroud over the mounting rail.
3. Secure the AN/PAQ-4B/C to the rail with the thumbscrew.
4. Attach the remote switch, at a comfortable location, using the provided cable hangers

NOTE

When mounting the AN/PAQ-4B/C in conjunction with a MILES device a Training Extender (Part No. A3267739) must be attached to the mounting rail before attaching the AN/PAQ-4B/C. This allows the laser beams to clear the MILES device


M4/M4A1 with AN/PAQ-4B/C Mounted on Hand Guards using the M4/M16 Mounting Rail
25 METER ZEROING TARGET
M16A2/M16A4
1.5 BLOCKS RIGHT
2.5 BLOCKS UP
REAR SIGHT WINDAGE
FRONT SIGHT
DESIGNATED STRIKE POINT
DESIGNATED STRIKE ZONE
Aiming Point
300 METERS
ZEROED FOR 300 METERS
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE
1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.
3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PAQ-4B/C Mtd on M4/M4A1 Using the M4/M16 Mounting Rail



Zero Target Data for M4/M4A1

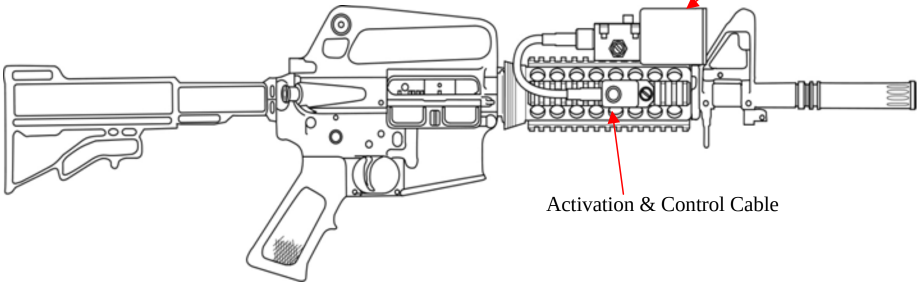
1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

M4/M4A1—AN/PSX-1 Interrogator Set Mounting Procedures



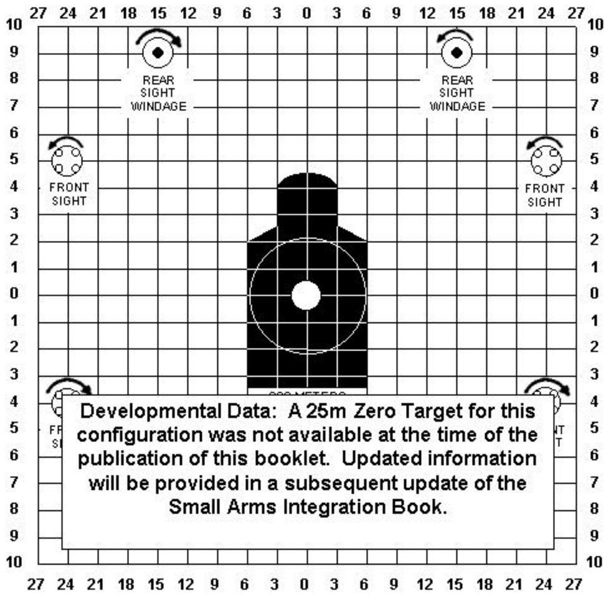
M4 - AN/PSX-1 Interrogator Set Mounting Instructions

The AN/PSX-1 Interrogator Set requires the installation of the M4 Adapter Rail System (ARS), Part No. 12973077, NSN 1005-01-452-3527.

1. Remove the M4 handguard and replace with M4 ARS.
2. Secure the AN/PSX-1 to the rail with the rail grabber-clamping knob.
3. Attach AN/PSX-1 (CIDDS) Activation Control Cable (Part No. 6451510-1) to back of AN/PSX-1 with interrogator switch on preferred side of ARS.

M4/M4A1 with AN/PSX-1 Mounted on Top Rail of M4 Adapter Rail System

25 METER ZEROING TARGET
M16A2/M16A4



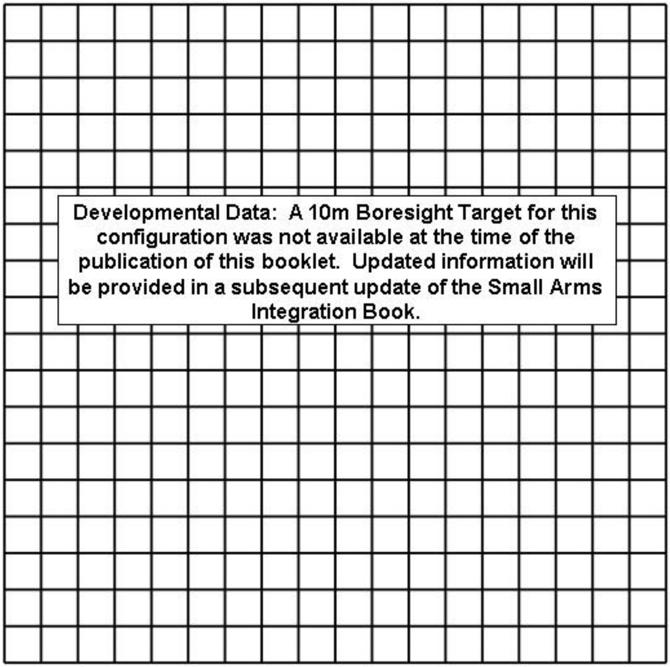
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE <u>300 METER SETTING</u>. THEN <u>CLOCKWISE</u> (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, <u>CLOCKWISE</u> (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

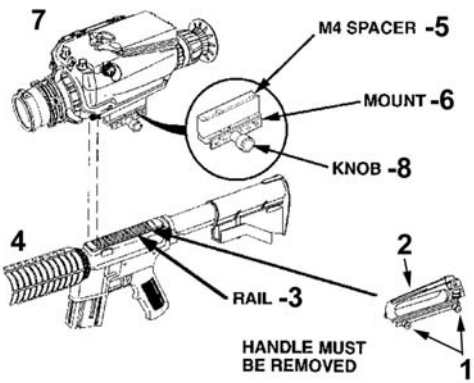
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB <u>COUNTER-CLOCKWISE</u> (DOWN) ONE CLICK TO THE <u>300 METER</u> SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR <u>300 METERS</u>.

10 Meter Boresight Tgt, AN/PSX-1 Mtd on M4/M4A1
Using the M4 ARS, Upper Rail



Grids are 1cm wide by 1cm high. Units must locally manufacture.



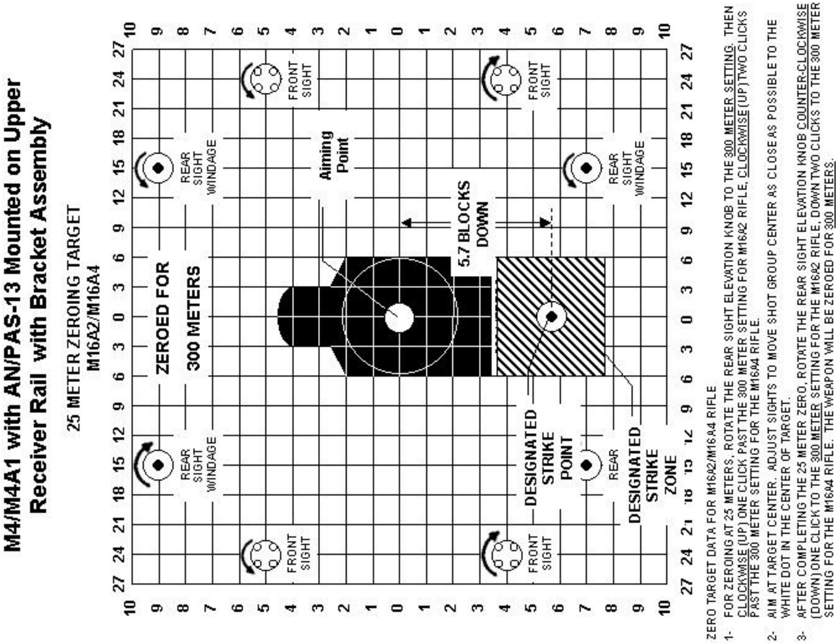
M4/M4A1 – AN/PAS-13, TWS Mounting Instructions
(See Annex B for Target Prep Instructions)

Install the AN/PAS-13 TWS on the M4/M4A1 using the 7/8" spacer (5) (part number 80063-A3268346) and TWS rail grabber/mount (80063-A3170556). (These items will have already been installed on the AN/PAS-13 by the unit Armorer IAW TM 11-5855-302-12&P.

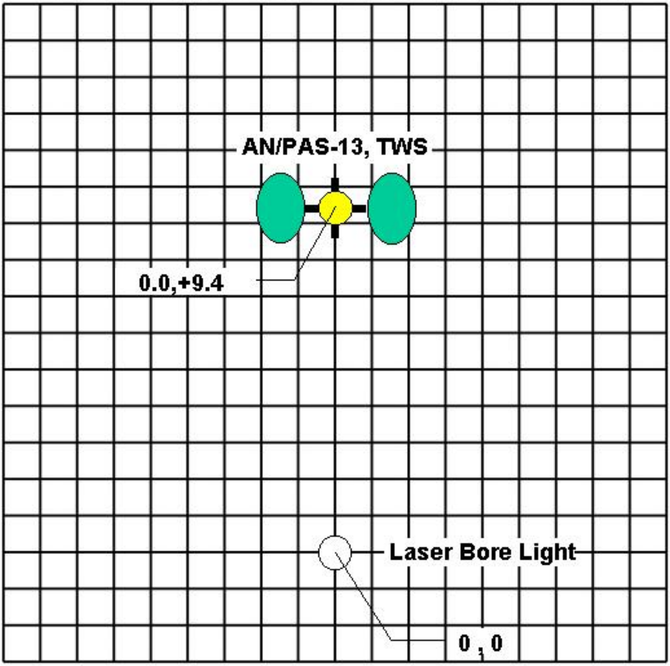
1. Loosen two knobs (1) on carrying handle (2) and remove carrying handle from rail (3) of M4/M4A1 Carbine (4). Retain carrying handle.
2. Spacer (5) and rail grabber/mount (6) are attached to the TWS (7).
3. Select a slot on rail (3) for mounting. Any slot may be used as long as rail grabber/mount does not hang over edge of rail.
4. Loosen rail grabber prior to attempting to mount. Place rail grabber/mount on rail and tighten rail grabber/mount knob (8) until two clicks are heard.

NOTE: Although a M4 Carbine is depicted in the picture to the left mounting procedures are identical for the M4, M16A4, M4 MWS, and M16A4 MWS.

M4/M4A1—AN/PAS-13 Zero and Boresight Targets



10 Meter Boresight Tgt-AN/PAS-13 Mtd on M4/M4A1 Using 7/8" Spacer and Rail Grabber on Receiver Rail



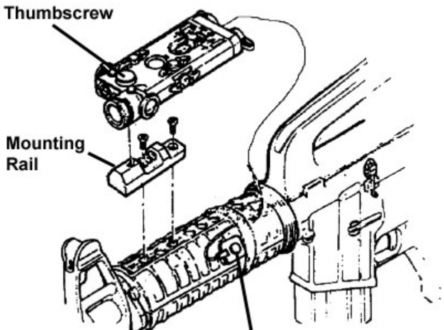
Zero Target Data for M4/M4A1

1. Stabilize Weapon.
2. Place Thermal signature material or tips of fingers on gray circles.
3. Aim between gray circles at cross-hair.
4. Adjust AN/PAS-13 until the borelight laser is centered on its dot.
5. You MUST zero reticle in both wide and narrow field of view.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



AN/PEQ-2 Mounting to M4 with M4/M16A2 Bracket Assembly

M4/M4A1 – AN/PEQ-2A Mounting Instructions

The AN/PAQ-4B/C is mounted to the M4 using the M4/M16A2 Bracket Assembly, Part No. A3186958, NSN 5340-01-390-38112. The Bracket Assembly (comprising the bracket and bracket caps, hidden under hand guards, and the mounting rail) may only be installed by the Small Arms Repairman MOS 45B.

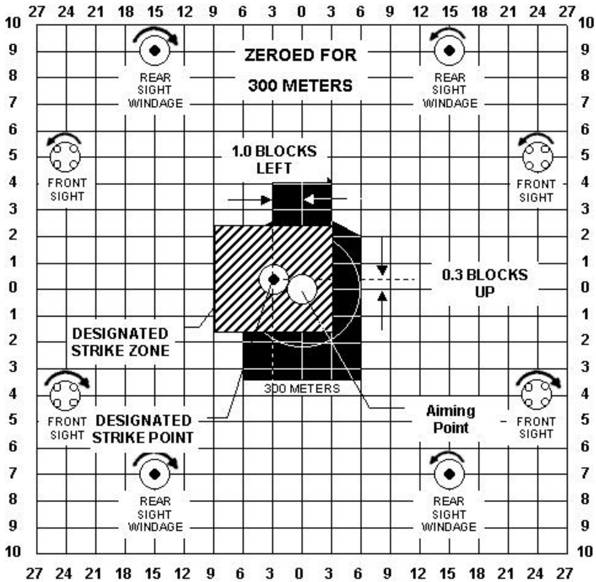
1. Install mounting rail through top hand guard to barrel clamp. (Unit Armorer Installed.)
2. Secure the AN/PEQ-2A to the rail with the thumbscrew.
3. Attach the remote switch, at a comfortable location, using the provided cable hangers.

NOTE

When mounting the AN/PEQ-2A in conjunction with a MILES device a Training Extender (Part No. A3267739) must be attached to the mounting rail before attaching the AN/PEQ-2A. This allows the laser beams to clear the MILES device

M4/M4A1 with AN/PEQ-2A Mounted on Hand Guards using the M4/M16 Mounting Rail

25 METER ZEROING TARGET
M16A2/M16A4



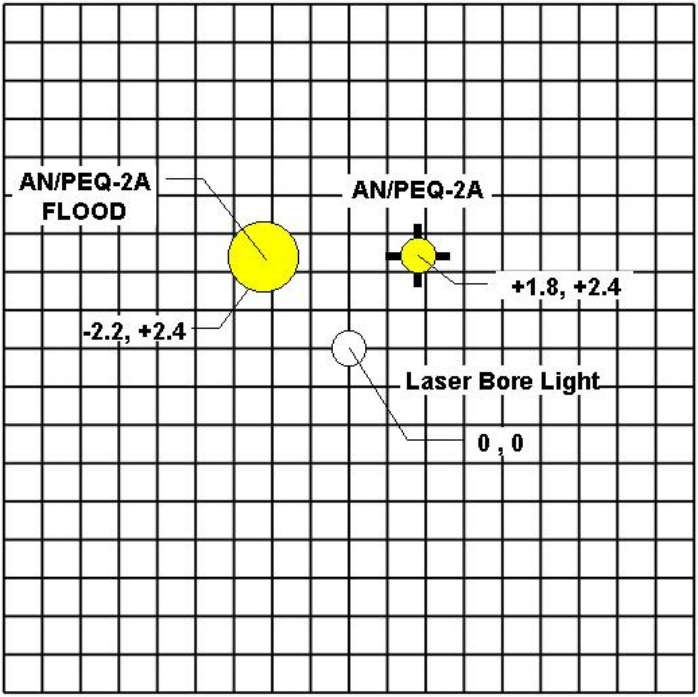
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PEQ-2A Mtd on M4/M4A1 Using the M4/M16 Mounting Rail



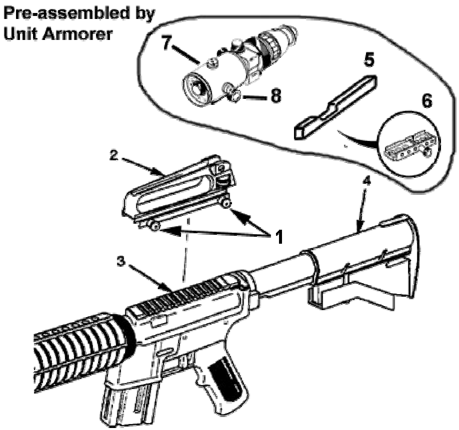
Zero Target Data for M4/M4A1

1. Stabilize Weapon.
2. Align Laser Borelight on it's dot.
3. Adjust AN/PEQ-2A until aiming laser is centered on the dot cross hair.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



M4/M4A1 – AN/PVS-4 Mounting Instructions

In order to properly mount the AN/PVS-4 to the M4 Carbine the unit Armorer must first install a spacer (NSN 5365-01-447-8991) and a rail grabber/mount (NSN 5340-01-449-8533).

1. Loosen two knobs (1) on carrying handle (2). Remove carrying handle from upper receiver rail (3). Retain carrying handle.

Note

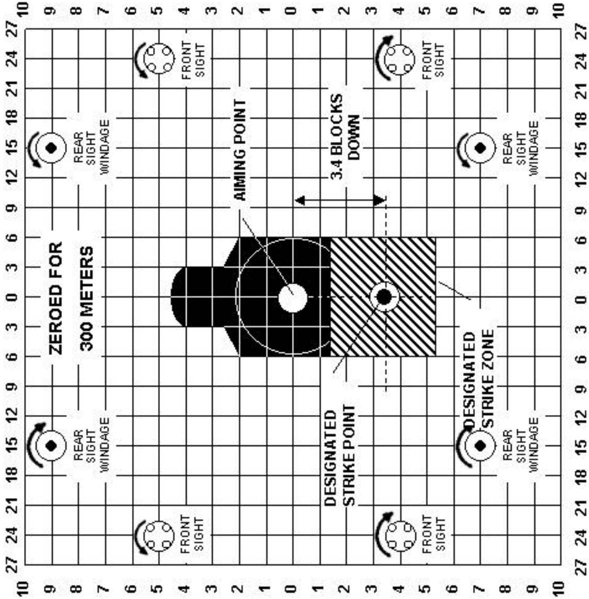
Spacer (5) and Grabber/Mount (6) are pre-assembled to the Sight (7) Unit Armorer.

2. Loosen the clamping knob (8) until sufficient space exits to place the clamping jaws on either side of the mounting rail (3). Tighten clamping knob (8) until two clicks are heard.
3. The AN/PVS-4 may be placed wherever on the upper receiver rail is most convenient for the operator, as long as the rail grabber/mount does not extend beyond the rail.
4. If the AN/PVS-4 is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.
5. Item (6) is depicted upside down in order to clearly show the bar, which must fit, into one of the slots on the rail.

M4/M4A1—AN/PVS-4 Zero and Boresight Targets

M4/M4A1 with AN/PVS-4 Mounted on Upper Receiver Rail with Offset Spacer and Rail Grabber

25 METER ZEROING TARGET
M16A2/M16A4



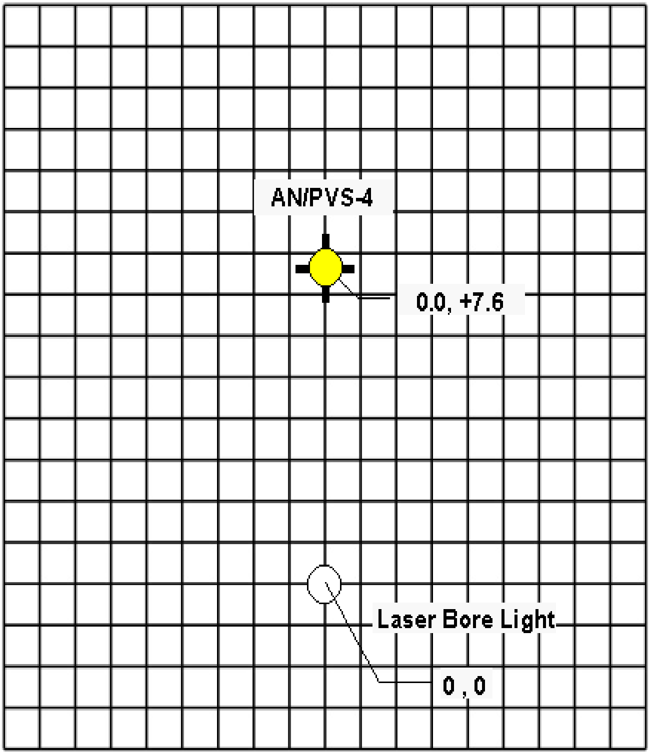
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PVS-4 Mtd on M4/M4A1 Using Spacer and Rail Grabber on the Receiver Rail



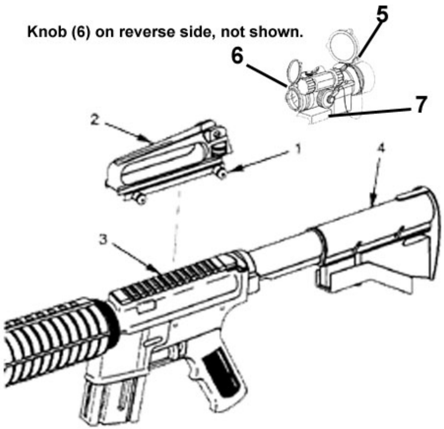
Zero Target Data for M4/M4A1

1. Stabilize Weapon.
2. Aim AN/PVS-4 at Cross Hair and adjust until the borelight strikes the Laser Borelight Dot.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



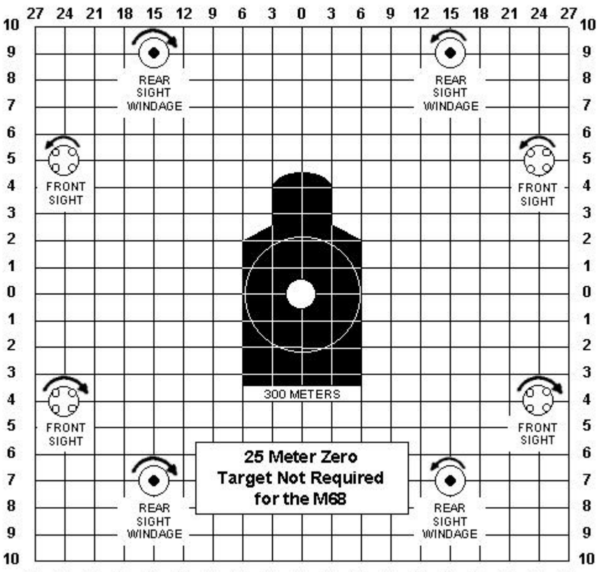
M4/M4A1 – M68, CCO Mounting Instructions

1. Loosen two knobs, item (1) on carrying handle item (2) and remove carrying handle from rail (3) of M4 Carbine (4). Retain carrying handle.
2. Install CCO (5) on rail (3).
   a. Loosen knob (6) on rail grabber/mount (7) until sufficient space exists to fit the jaws on either side of the rail (3).
   b. Select slot on rail (3) for mounting. Any slot may be used as long as rail grabber/mount does not hang over edge of rail.
   c. Place rail grabber/mount on rail and tighten knob (6) until two clicks are heard.

NOTE: When placing the CCO on the M4/M16A4 the unit Armorer must first install the half-moon shaped spacer on the CCO IAW TM 9-1240-413-12&P.

M4/M4A1 with M68, CCO Mtd on Upper Receiver Rail with Half Moon Spacer

25 METER ZEROING TARGET
M16A2/M16A4



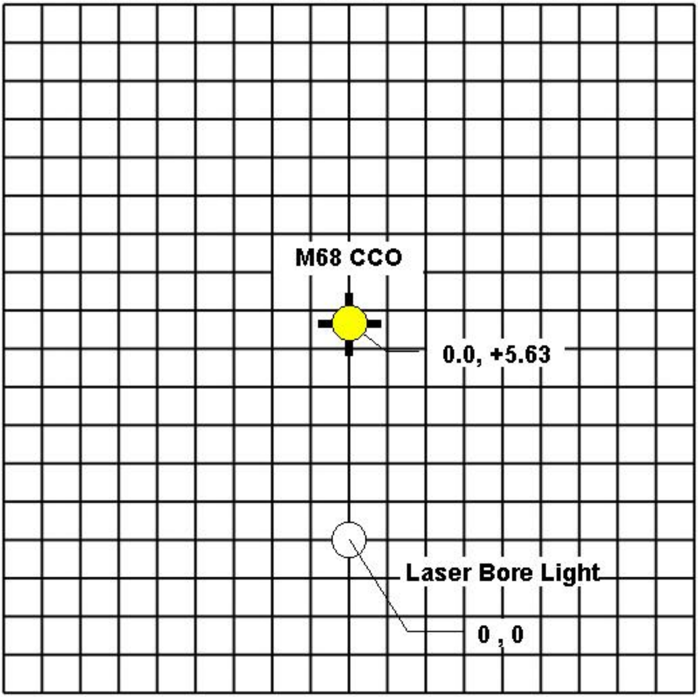
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-M68 CCO Mtd on M4/M4A1 Upper Receiver Rail with Half Moon Spacer



Zero Target Data for M4/M4A1

1. Stabilize Weapon.
2. Aim CCO at the dot cross hair.
3. Adjust the CCO until the laser borelight is centered on its dot.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

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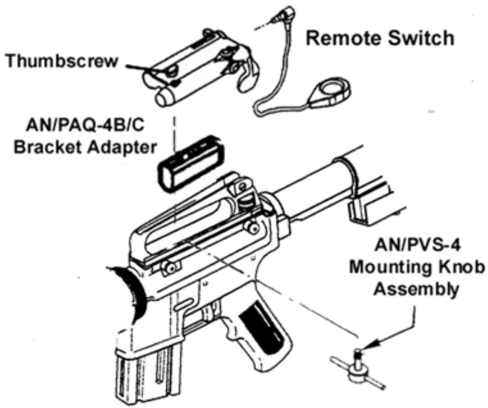
M4/M203A1 Grenade Launcher



M4 Grenade Launcher Mounting Instructions

The M203A1 Grenade Launcher must be mounted to the M4 by the unit's supporting DS Maintenance Company IAW instructions contained in TM 9-1010-221-23&P.

Individual soldiers should not attempt to either mount or dismount the grenade launcher to the weapon.



M4/M203 – AN/PAQ-4B/C Mounting Instructions

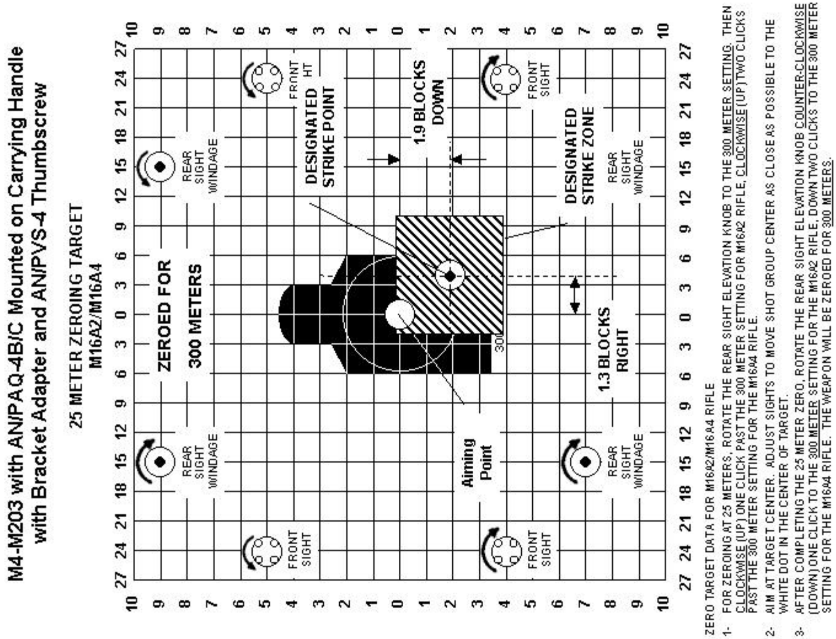
Mounting of the AN/PAQ-4B/C to the M203 is accomplished by using the Mounting Knob Assembly from the AN/PVS-4 Sight (NSN 5355-01-039-2834) and the Bracket Adapter (plastic) from the AN/PAQ-4B/C (NSN 5340-01-362-9873).

1. Attach the AN/PAQ-4B/C Bracket Adapter to the M4 carrying handle of the M203 using the AN/PVS-4 Mounting Knob Assembly.

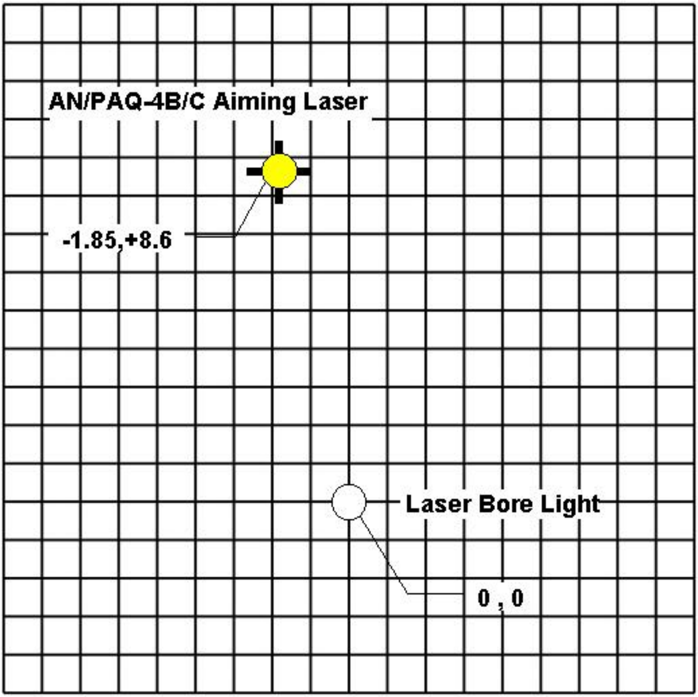
2. Secure the AN/PAQ-4B/C to the Bracket Adapter, using the thumbscrew on the AN/PAQ-4B/C.

3. Attach the remote switch to the AN/PAQ-4B/C and locate the switch at a convenient location.

M4/M203—AN/PAQ-4B/C Zero and Boresight Targets



10 Meter Boresight Tgt-AN/PAQ-4B/C Mtd on M4/M203 Carrying Handle
with AN/PAQ-4B/C Bracket Adapter and AN/PVS-4 Mounting Knob



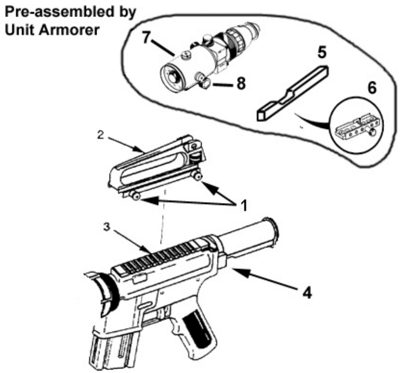
Zero Target Data for M4/M203

1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



M4/M203 – AN/PVS-4 Mounting Instructions

1. Loosen two knobs (1) on carrying handle (2). Remove carrying handle from upper receiver rail (3). Retain carrying handle.

Note

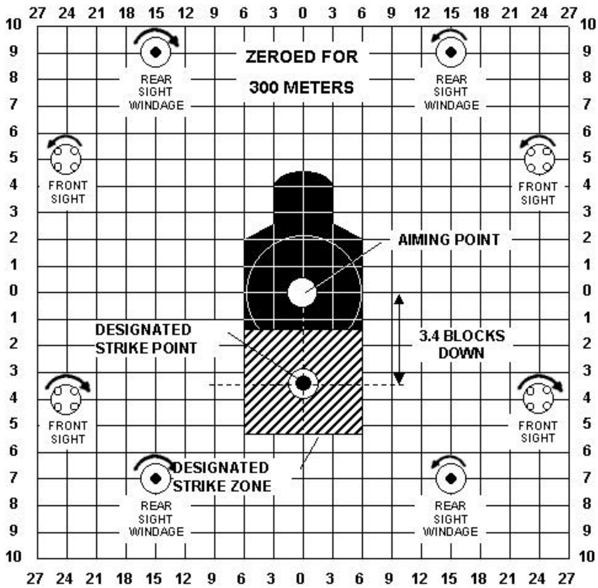
Spacer (5) (NSN 5365-01-447-8991) and Grabber/Mount (6) (NSN 5340-01-449-8533).are pre-assembled to the Sight (7) by Unit Armorer.

2. Loosen the clamping knob (8) until sufficient space exits to place the clamping jaws on either side of the mounting rail (3). Tighten clamping knob (8) until two clicks are heard.
3. The AN/PVS-4 may be placed at whichever position on the upper receiver rail is most convenient for the operator, as long as the rail grabber/mount does not extend beyond the rail.
4. If the AN/PVS-4 is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.
5. You **<u>can not</u>** mount both the AN/PVS-4 and quadrant sights at the same time.

NOTE: Item (6) is depicted upside down in order to clearly show the bar, which must fit, into

M4-M203 with AN/PVS-4 Mounted on Upper Receiver Rail with Offset Spacer and Rail Grabber

25 METER ZEROING TARGET
M16A2/M16A4



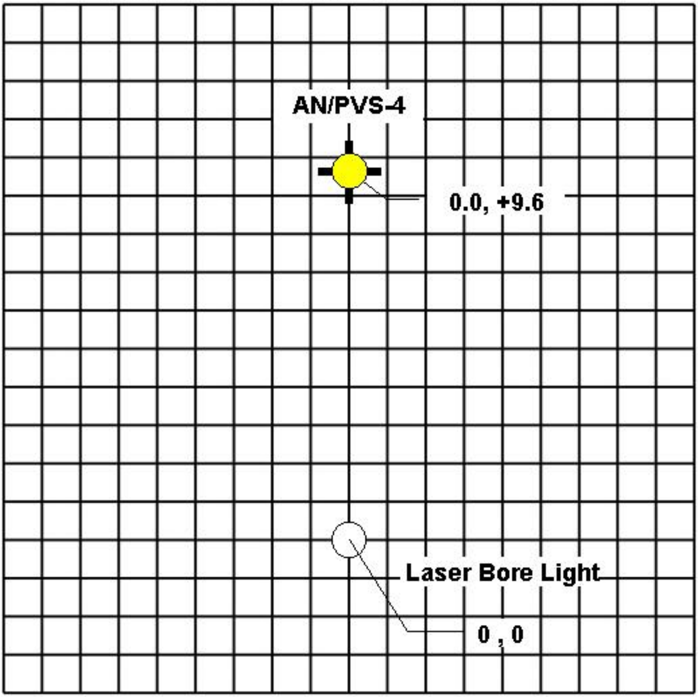
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PVS-4 Mtd on M4/M203 Receiver Rail with Rail Grabber and Spacer



Zero Target Data for M4/M203

1. Stabilize Weapon.
2. Aim AN/PVS-4 at Cross Hair and adjust until the borelight strikes the Laser Borelight Dot.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

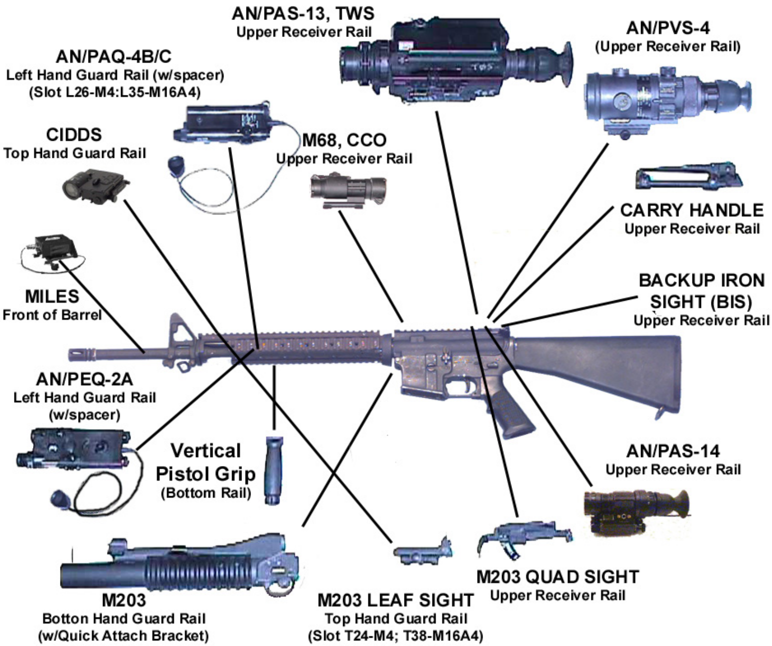
US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

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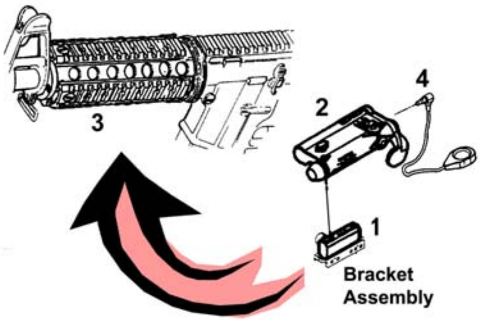
Modular Weapon System Diagram

(M16A4 Rifle Version MWS Depicted)



Notes

- M4 MWS consists of the M4 Carbine and the M4 ARS.
- M16 MWS consists of the M16A4 Rifle and the M5 ARS
- Mounting points and procedures are the same for both weapons unless depicted as separate sections in the following pages.
- Backup Iron Site is a developmental item. Photos are not available. Photos will appear in future editions of the Small Arms Integration Book



MWS – AN/PAQ-4B/C Mounting Instructions

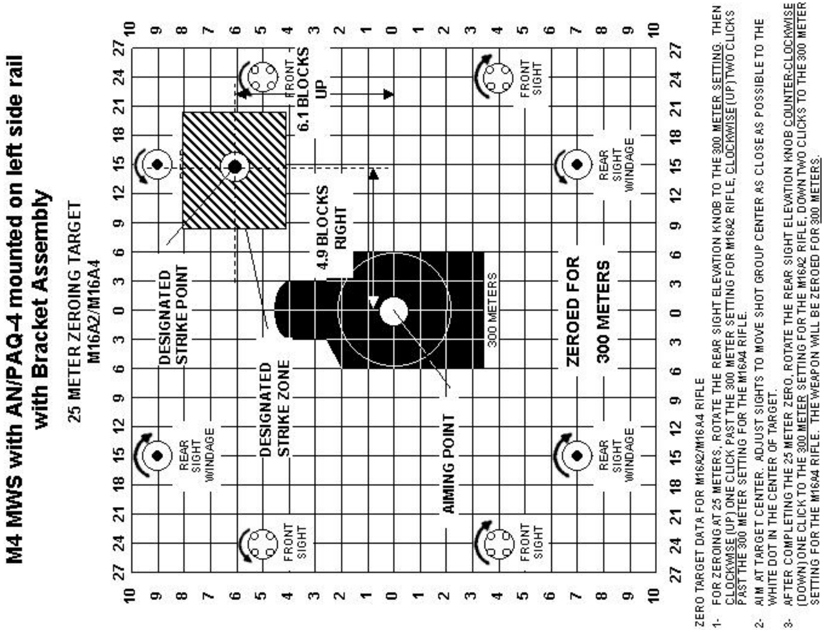
The AN/PAQ-4B/C is mounted on the left side rail using the Bracket Assembly (NSN 5340-01-390-3812) depicted in the diagram at left.

1. Mount the bracket adapter (1) to the AN/PAQ-4B/C (2) using the thumbscrew on the AN/PAQ-4B/C.
2. Loosen the clamping knob until the rail grabber/mount has sufficient space to fit over the left side rail (3). Tighten the clamping knob until two clicks are heard.
3. The AN/PAQ-4B/C may be placed at whichever position, on the left side rail, is most convenient for the operator. If however the AN/PAQ-4B/C is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.
4. Install the remote switch (4) in a convenient location using the provided cable hangers.

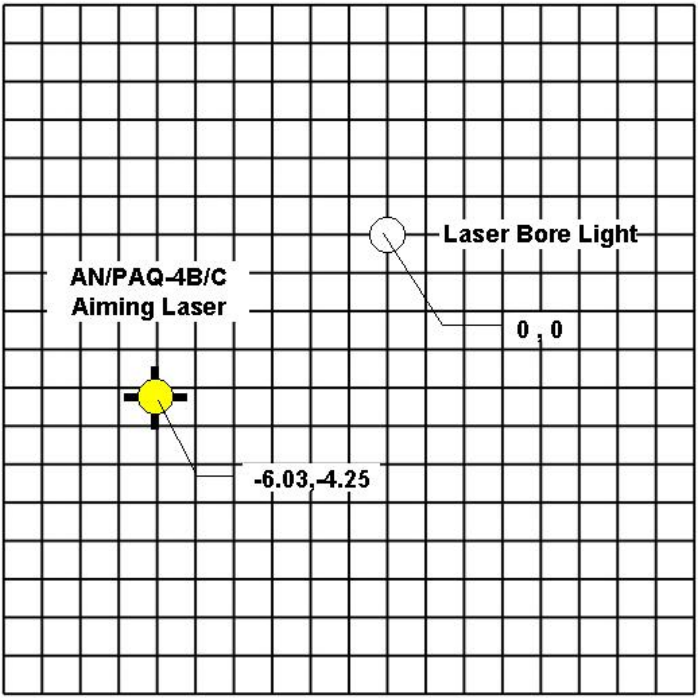
Note

Knob on the rail grabber/mount should be pointing up when installation is complete.

MWS—AN/PAQ-4B/C Zero and Boresight Targets



10 Meter Boresight Tgt-AN/PAQ-4B/C Mtd on M4 MWS Using AN/PAQ-4B/C Bracket Adapter and Rail Grabber on Left Side Rail



Zero Target Data for M4 MWS

1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

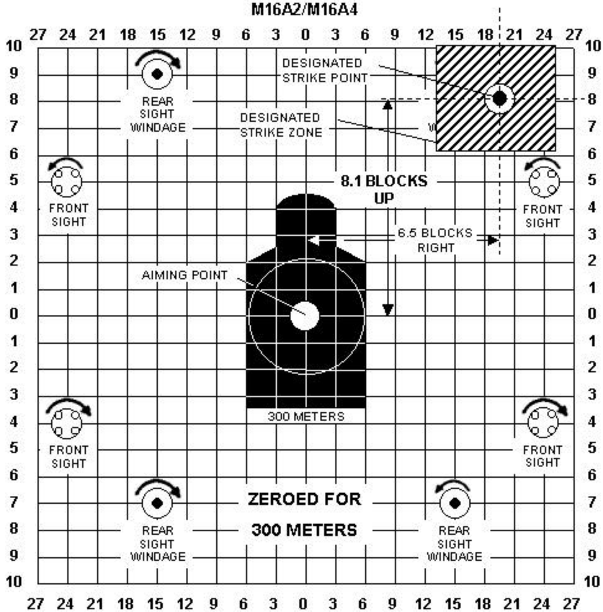
10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

M16A4 MWS with AN/PAQ-4 mounted on left side rail with Bracket Assembly

25 METER ZEROING TARGET
M16A2/M16A4



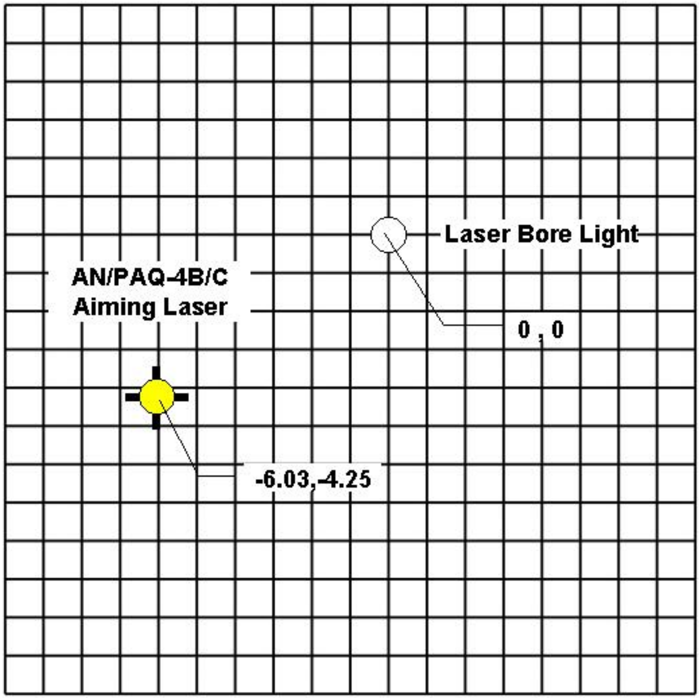
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PAQ-4B/C Mtd on M16 MWS Using
AN/PAQ-4B/C Bracket Adapter and Rail Grabber on Left Side Rail



Zero Target Data for M16 MWS

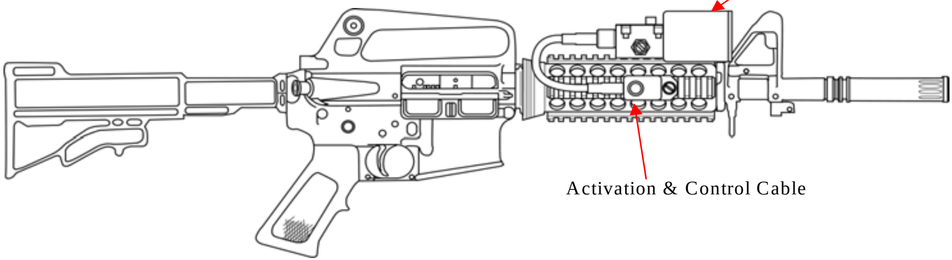
1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

MWS—AN/PSX-1 Interrogator Set Mounting Instructions

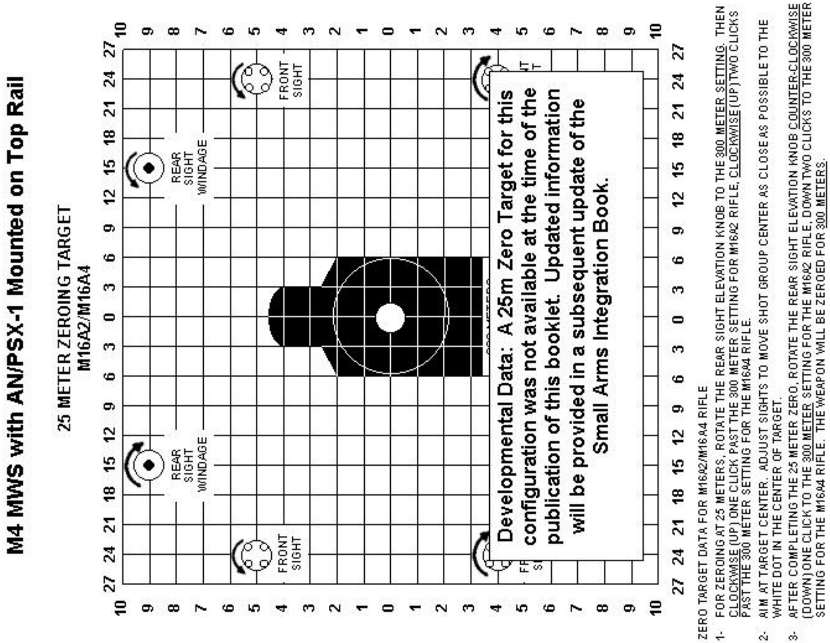


MWS—AN/PSX-1 Interrogator Set Mounting Instructions

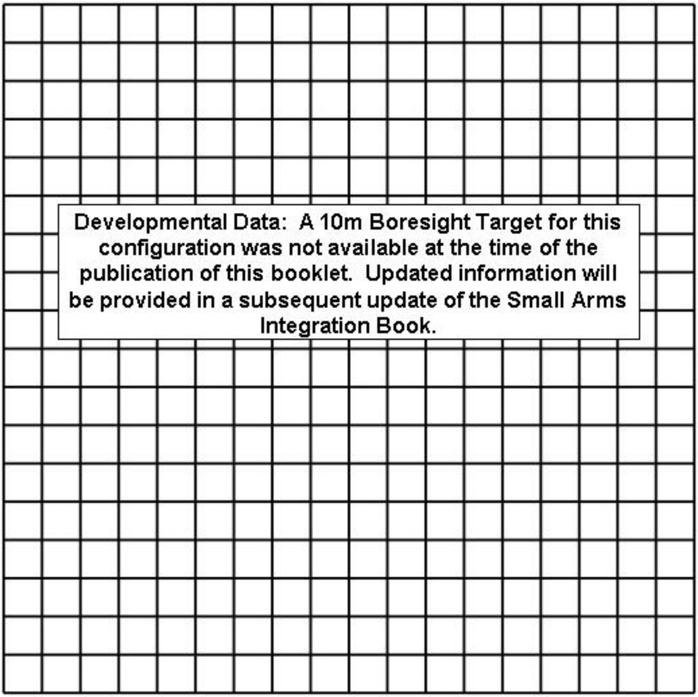
The AN/PSX-1 Interrogator Set installs on the M4 Adapter Rail System of the Modular Weapon System. The Interrogator set is installed on the upper hand guard rail, behind the front sight post.

1. Remove the M4 handguard and replace with M4 ARS.
2. Secure the AN/PSX-1 to the rail at a location convenient for the operator, with the rail grabber-clamping knob.
3. Attach AN/PSX-1 (CIDDS) Activation Control Cable (Part No. 6451510-1) to back of AN/PSX-1 with interrogator switch on preferred side of ARS.

NOTE: If the AN/PSX-1 is removed from the weapon it must be returned to the same slot on the rail to insure that zero is retained.

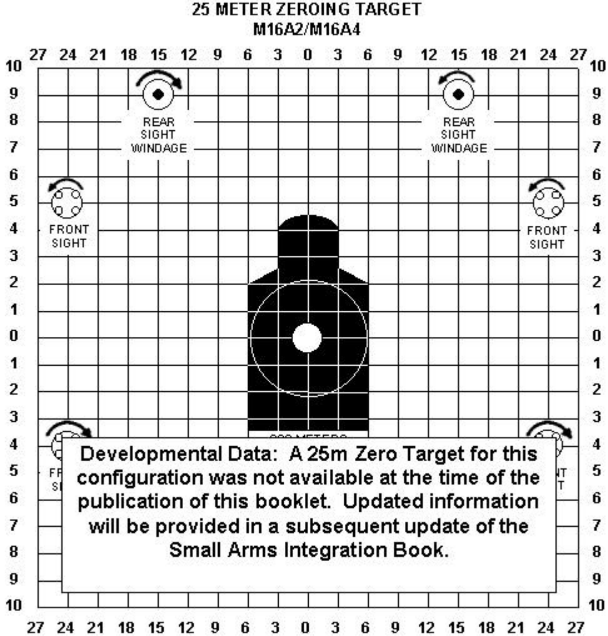

M4 MWS with AN/PSX-1 Mounted on Top Rail
25 METER ZEROING TARGET
M16A2/M16A4
REAR SIGHT WINDAGE
REAR SIGHT WINDAGE
FRONT SIGHT
FRONT SIGHT
Developmental Data: A 25m Zero Target for this configuration was not available at the time of the publication of this booklet. Updated information will be provided in a subsequent update of the Small Arms Integration Book.
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE
1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.
3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PSX-1 Mtd on M4 MWS using Top Rail



Grids are 1cm wide by 1cm high. Units must locally manufacture.

M16A4 MWS with AN/PSX-1 Mounted on Top Rail



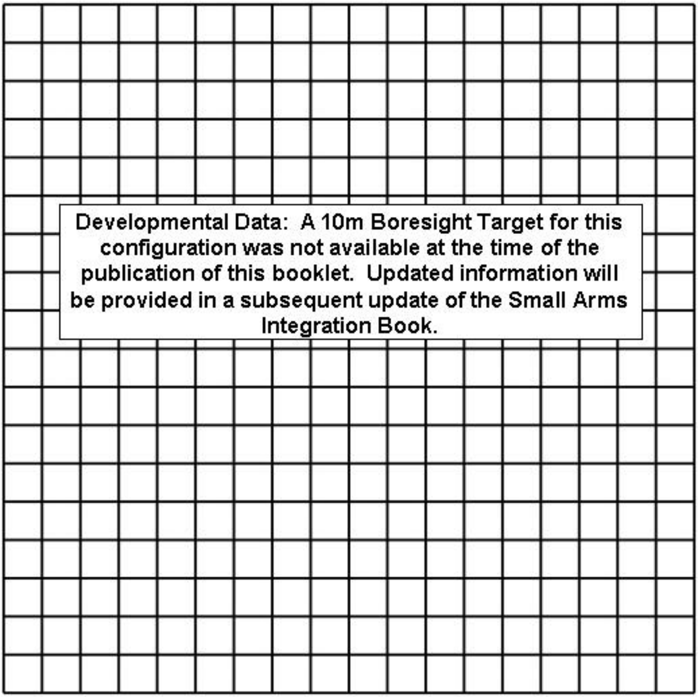
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

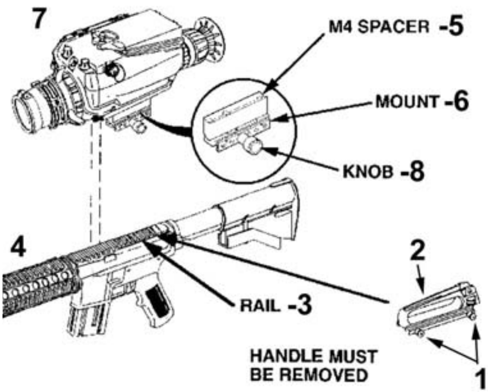
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PSX-1 Mtd on M16 MWS using Top Rail



Grids are 1cm wide by 1cm high. Units must locally manufacture.



MWS – AN/PAS-13, TWS Mounting Instructions

(See Annex B for Target Prep Instructions)

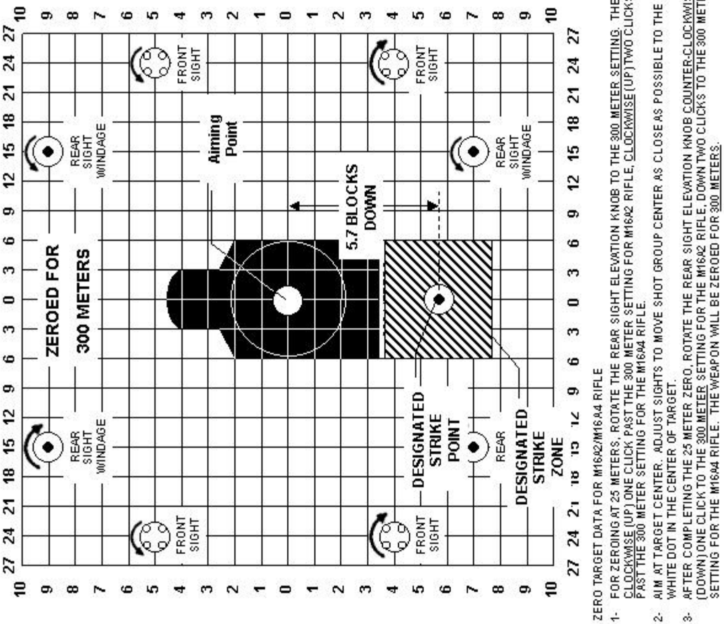
Install the AN/PAS-13 TWS on the MWS using the 7/8" spacer (5) (part number 80063-A3268346) and TWS rail grabber/mount (80063-A3170556). (Already installed on the TWS by the Armorer IAW TM 11-5855-302-12&P.

1. Loosen knobs (1) on carrying handle (2) and remove carrying handle from rail (3) of MWS Carbine (4). Retain carrying handle.
2. Spacer (5) and rail grabber/mount (6) are attached to the TWS (7).
3. Loosen the clamping knob (8) until the jaws move far enough apart to fit over the rail.
4. Select a slot on rail (3). Any slot may be used as long as rail grabber/mount does not hang over edge of rail. If the TWS is removed from the rail the operator must note the position at which the device was zeroed, and return the device to that position in order to retain zero.
5. Place rail grabber/mount on rail and tighten rail grabber knob (8) until two clicks are heard.

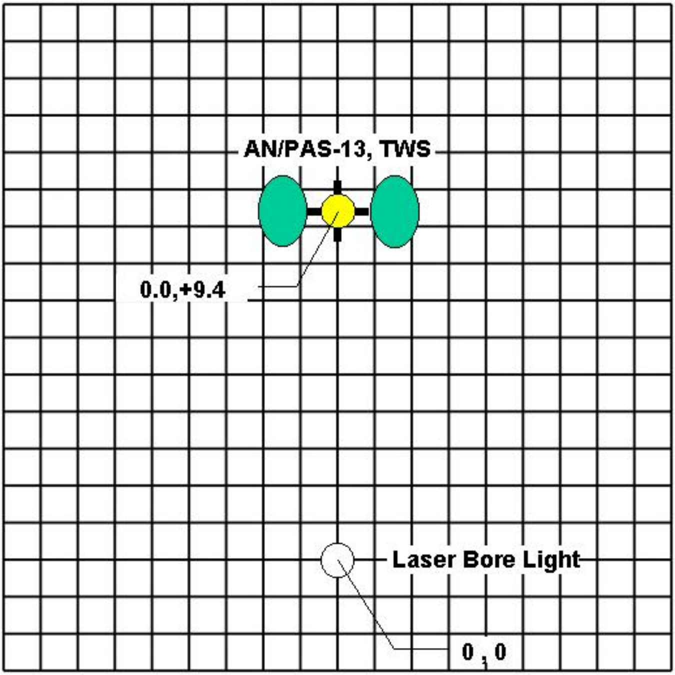
NOTE: Although a M4 Carbine is depicted in the picture to the left mounting procedures are identical for the M4, M16A4, M4 MWS, and M16 MWS.

M4 MWS with AN/PAS-13 Mounted on Upper Receiver Rail with TWS Spacer and Grabber

25 METER ZEROING TARGET
M16A2/M16A4



10 Meter Boresight Tgt-AN/PAS-13 Mtd on M4 MWS Receiver Rail with AN/PAS-13 Spacer and Grabber



Zero Target Data for M4 MWS

1. Stabilize Weapon.
2. Place Thermal signature material or tips of fingers on gray circles.
3. Aim between gray circles at cross-hair.
4. Adjust AN/PAS-13 until the borelight laser is centered on its dot.
5. You MUST zero reticle in both wide and narrow field of view.

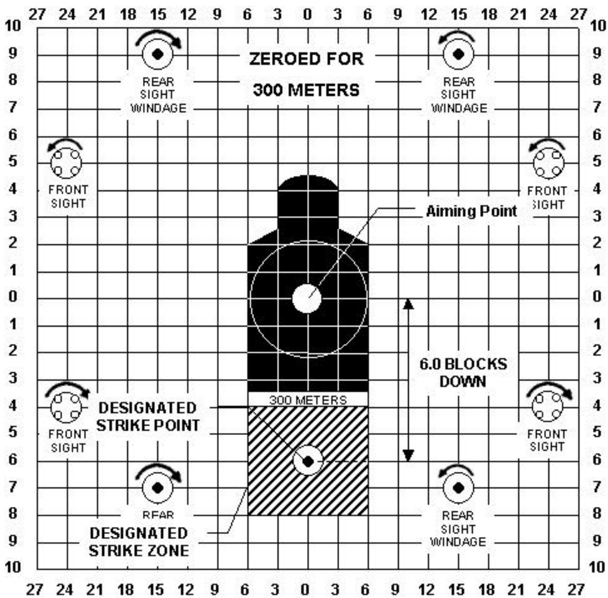
10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

M16A4 MWS with AN/PAS-13 Mounted on Upper Receiver Rail with TWS Spacer and Grabber

25 METER ZEROING TARGET
M16A2/M16A4



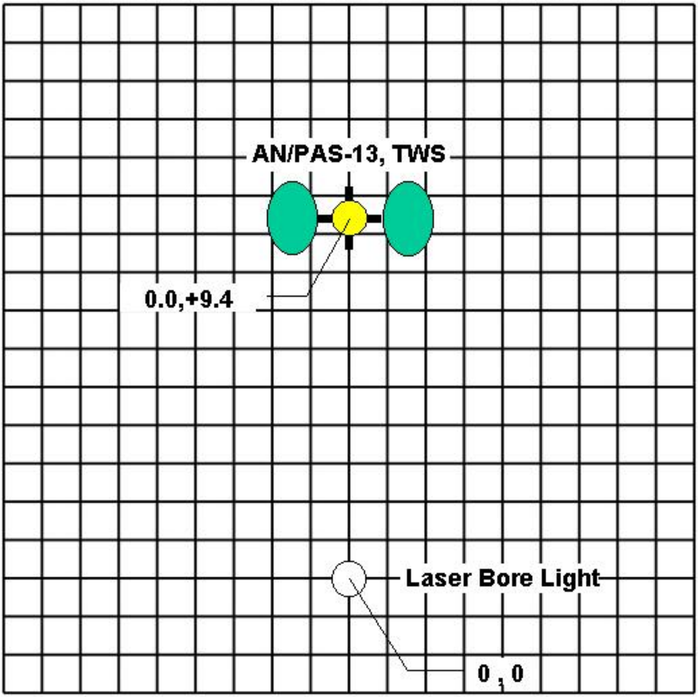
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PAS-13 Mtd on M16 MWS Receiver Rail with AN/PAS-13 Spacer and Grabber



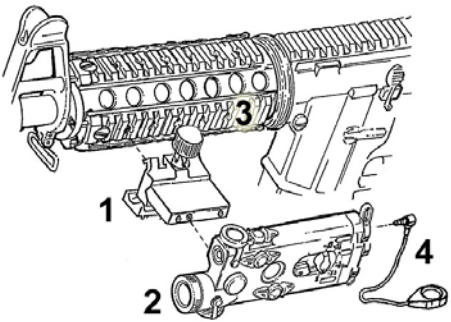
Zero Target Data for M16 MWS

1. Stabilize Weapon.
2. Place Thermal signature material or tips of fingers on gray circles.
3. Aim between gray circles at cross-hair.
4. Adjust AN/PAS-13 until the borelight laser is centered on its dot.
5. You MUST zero reticle in both wide and narrow field of view.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



MWS – AN/PEQ-2A Mounting Instructions

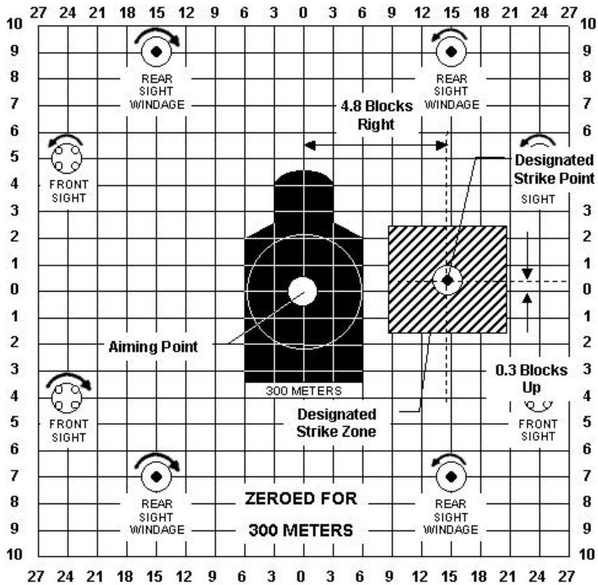
The AN/PEQ-2A is mounted on the left side rail using the Bracket Assembly (1) (NSN 5340-01-390-3812) depicted in the diagram at left.

1. Mount the rail grabber/mount to the AN/PEQ-2A (2) using thumbscrew as depicted to the left of these instructions.
2. Loosen the clamping knob on the rail grabber/mount until the rail grabber has sufficient space to fit over the left side rail (3). Tighten the clamping knob until two clicks are heard.
3. The AN/PEQ-2A may be placed at whichever position on the left side rail is most convenient for the operator. If however the AN/PEQ-2A is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.
4. If desired, connect the remote switch to the AN/PEQ-2A and attach it in a convenient location.

NOTE: The knob of the Bracket Assembly will be pointing up, when the AN/PEQ-2A and mount have been properly installed on the Left side Rail.

M4/MWS with AN/PEQ-2A Mounted on Left Side Rail with Bracket Assembly

25 METER ZEROING TARGET
M16A2/M16A4



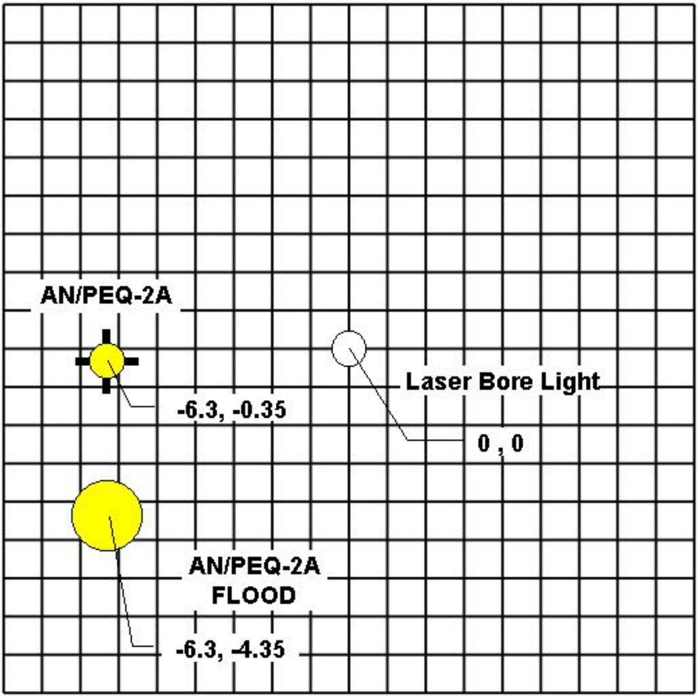
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PEQ-2A Mtd on M4 MWS Left Side Rail with Bracket Assembly



Zero Target Data for M4 MWS

1. Stabilize Weapon.
2. Align Laser Borelight on it's dot.
3. Adjust AN/PEQ-2A until aiming laser is centered on the dot cross hair.

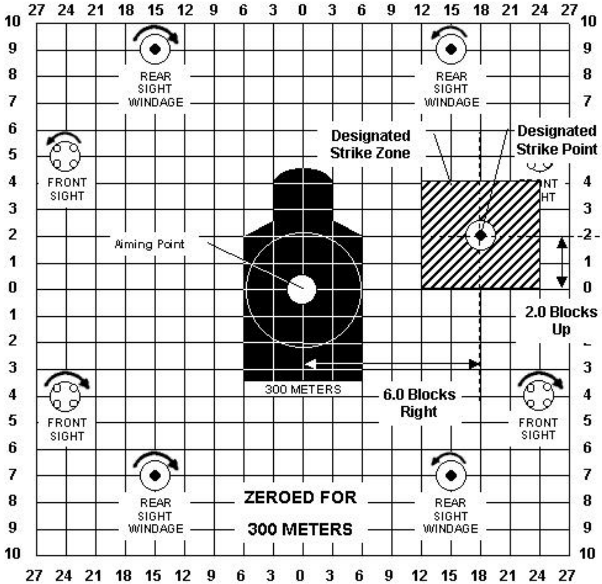
10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

M16A4/MWS with AN/PEQ-2A Mounted on Left Side Rail with Bracket Assembly

25 METER ZEROING TARGET
M16A2/M16A4



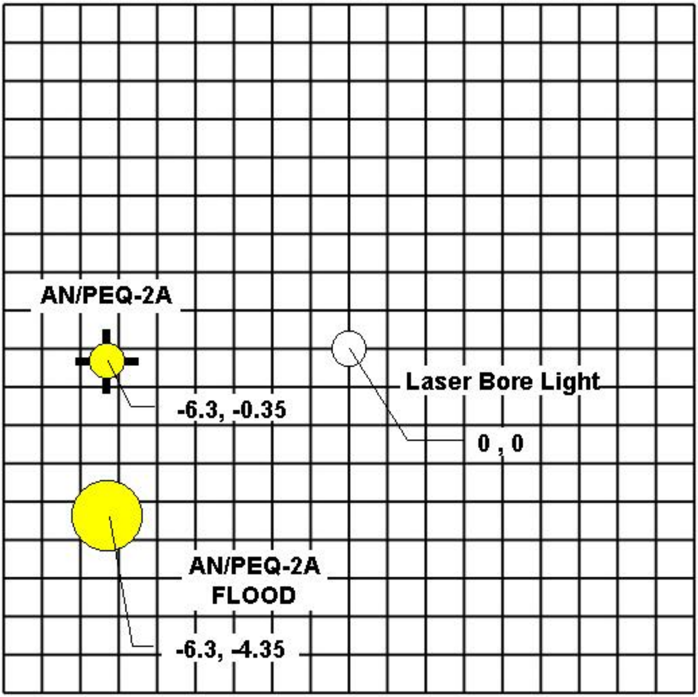
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PEQ-2A Mtd on M16 MWS Left Side Rail with Bracket Assembly



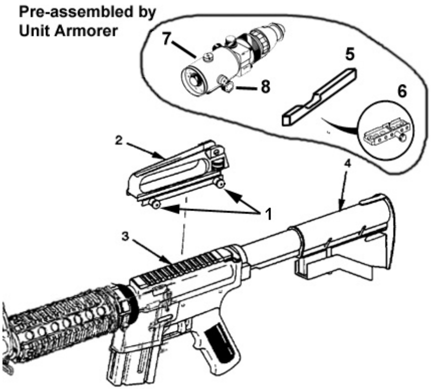
Zero Target Data for M16 MWS

1. Stabilize Weapon.
2. Align Laser Borelight on it's dot.
3. Adjust AN/PEQ-2A until aiming laser is centered on the dot cross hair.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



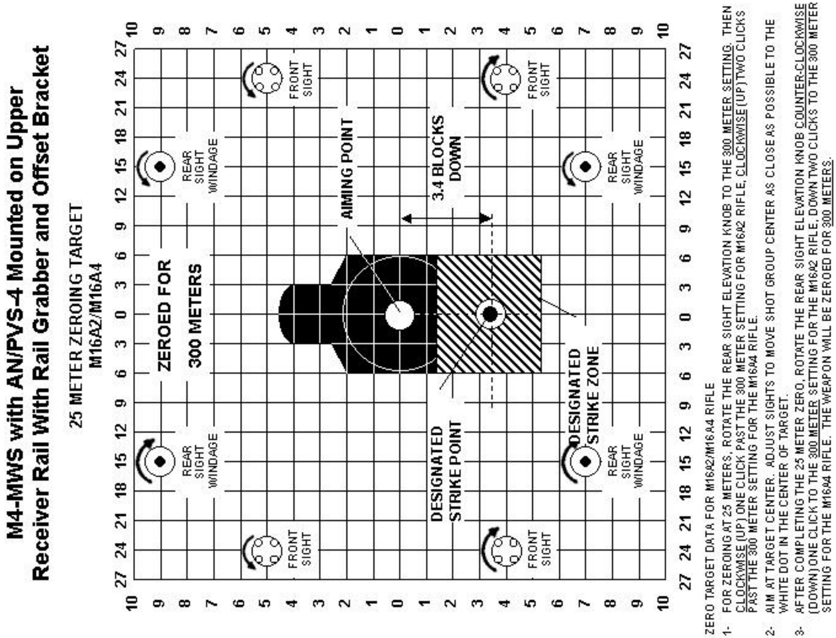
MWS – AN/PVS-4 Mounting Instructions

To mount the AN/PVS-4 to the MWS the unit Armorer must install a spacer (NSN 5365-01-447-8991) and a rail grabber/mount (NSN 5340-01-449-8533).

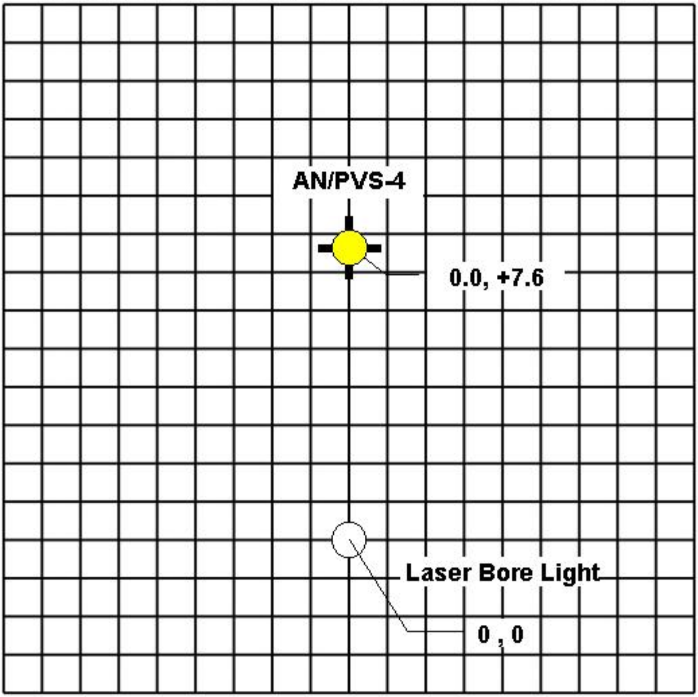
1. Loosen two knobs (1) on carrying handle (2). Remove carrying handle from upper receiver rail (3). Retain carrying handle.
2. Install spacer (5) on AN/PVS-4 (7) using the two screws provided. Attach rail grabber/mount (6) to the spacer (5) using the two screws provided. (Pre-assembled by Unit Armorer.)
3. Loosen the clamping knob (8) until sufficient space exists to place the clamping jaws on either side of the mounting rail (3). Tighten clamping knob (8) until two clicks are heard.
4. The AN/PVS-4 may be placed on the upper receiver rail in the most convenient slot for the operator, as long as the rail grabber/mount does not extend beyond the rail.
5. If the AN/PVS-4 is removed the operator must take note of the position at which the device was zeroed, and return the device to that same position to insure zero is retained.

NOTE: Item (6) is depicted upside down in order to clearly show the bar which must fit into one of the slots on the rail.

MWS—AN/PVS-4 Zero and Boresight Targets



10 Meter Boresight Tgt-AN/PVS-4 Mtd on M4 MWS
Using a Spacer and Rail Grabber on the Receiver Rail



Zero Target Data for M4 MWS

1. Stabilize Weapon.
2. Aim AN/PVS-4 at Cross Hair and adjust until the borelight strikes the Laser Borelight Dot.

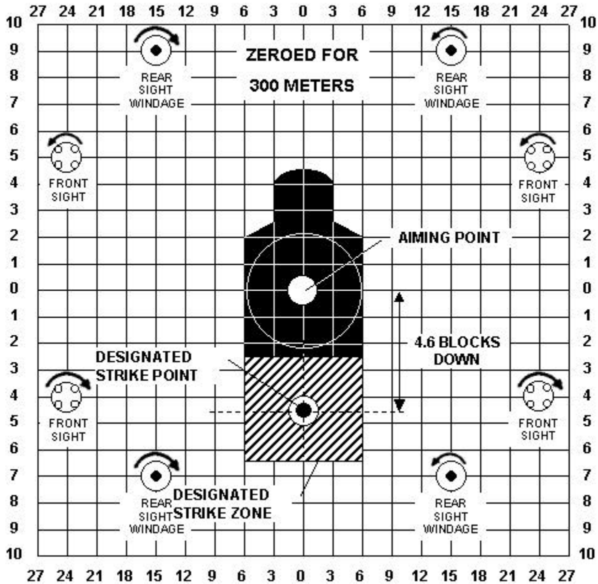
10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

M16A4-MWS with AN/PVS-4 Mounted on Upper Receiver Rail With Rail Grabber and Offset Bracket

25 METER ZEROING TARGET
M16A2/M16A4



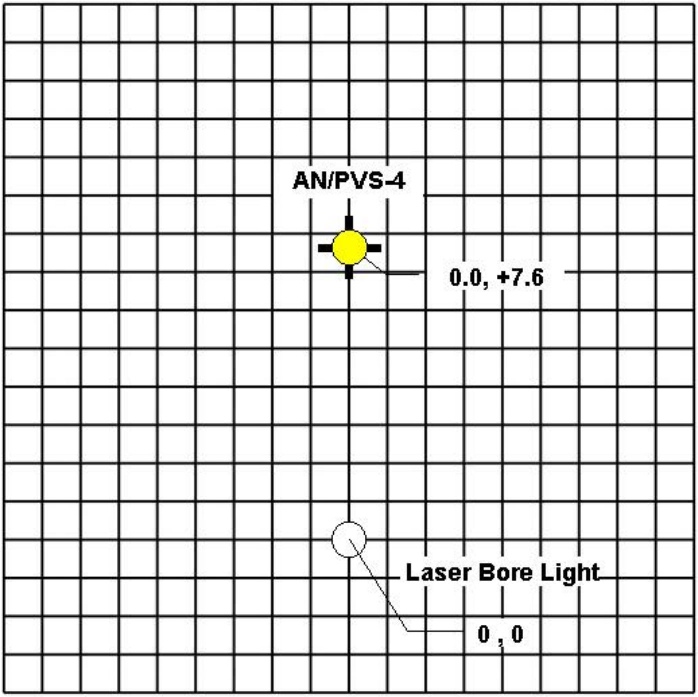
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PVS-4 Mtd on M16 MWS
Using a Spacer and Rail Grabber on the Receiver Rail



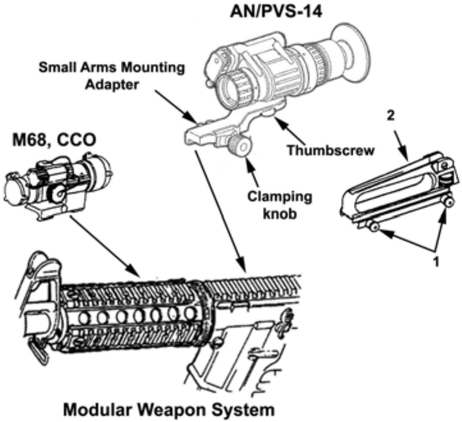
Zero Target Data for M16 MWS

1. Stabilize Weapon.
2. Aim AN/PVS-4 at Cross Hair and adjust until the borelight strikes the Laser Borelight Dot.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



MWS – AN/PVS-14 Mounting Instructions

Procedures may be found located in TM 11-5855-306-10.

1. Loosen knobs (1) on carrying handle (2) and remove from the weapon. (Retain carrying handle for later use.)
2. Be sure the alignment boss on the adapter lines up with the groove in the AN/PVS-14. Tighten the thumbscrew to secure the AN/PVS-14 to the small arms mounting adapter.
3. Loosen the clamping knob on the Small Arms mounting adapter. Position the AN/PVS-14 and mounting adapter on the weapon's mounting rail. Tighten by turning the clamping knob until two clicks are heard.
4. Adjust the fore/aft position of the AN/PVS-14 as necessary by loosening the clamping knob and repositioning the Small Arms mounting adapter on the weapon's mounting rail.
5. The AN/PVS-14 **should only be mounted** on the weapon if there **is no laser designator**, or night vision device available for target identification & engagement. The system can be used for passive targeting when active IR cannot be used.

NOTE: To use the AN/PVS-14 as an aiming device the M68, CCO, must also be mounted on the weapon. CCO is mounted forward of the AN/PVS-14, on the top hand guard rail.

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CAUTION

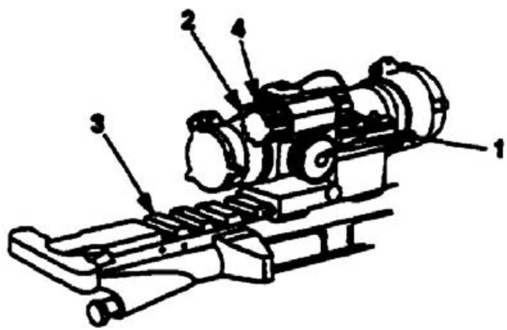
Hand tighten mounting hardware only. Using tools to tighten mounting hardware could damage equipment.

NOTE

The sight assembly mounts directly to the upper receiver rail on top of the M4/M4A1 and M16A4. The mount is not required. Make sure the spacer (1) has been installed before mounting M68 on M4/M4A1 or M16A4.

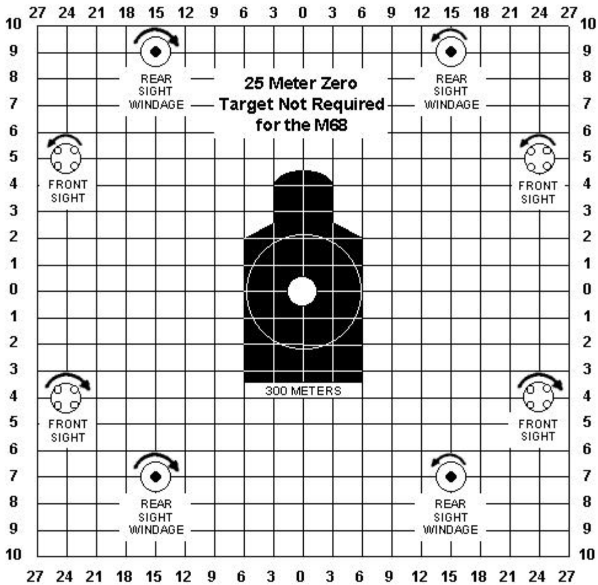
1. If the same sight (serial number is on battery compartment) is installed in the same position on the rail on the same weapon, re-zeroing is not required.

2. Install sight assembly (2) on the upper receiver rail (3). Sight may be installed in any position on the upper receiver rail. Make sure grabber edges area around mounting rail and torque bar is in slot. To ensure that sight assembly is secure, tighten torque knob (4) (behind M68) until it clicks two times. Hand tighten only.



M4/MWS with M68, CCO Mtd on Receiver Rail without Half Moon Spacer

25 METER ZEROING TARGET
M16A2/M16A4



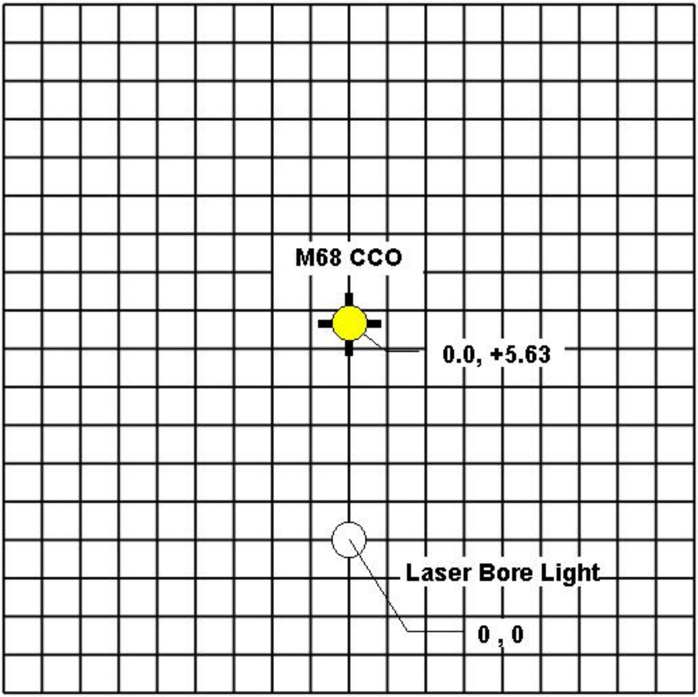
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-M68 CCO Mtd on M4 MWS Receiver Rail with Half Moon Spacer



Zero Target Data for M4 MWS

1. Stabilize Weapon.
2. Aim CCO at the dot cross hair.
3. Adjust the CCO until the laser borelight is centered on its dot.

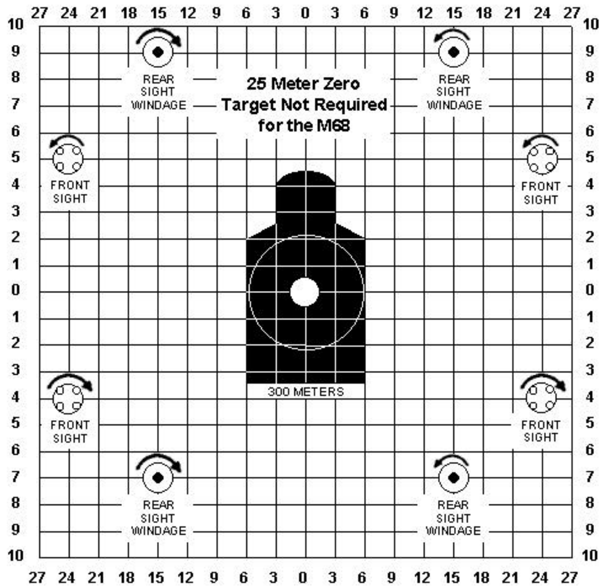
10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

M16A4/MWS with M68, CCO Mtd on Receiver Rail without Half Moon Spacer

25 METER ZEROING TARGET
M16A2/M16A4



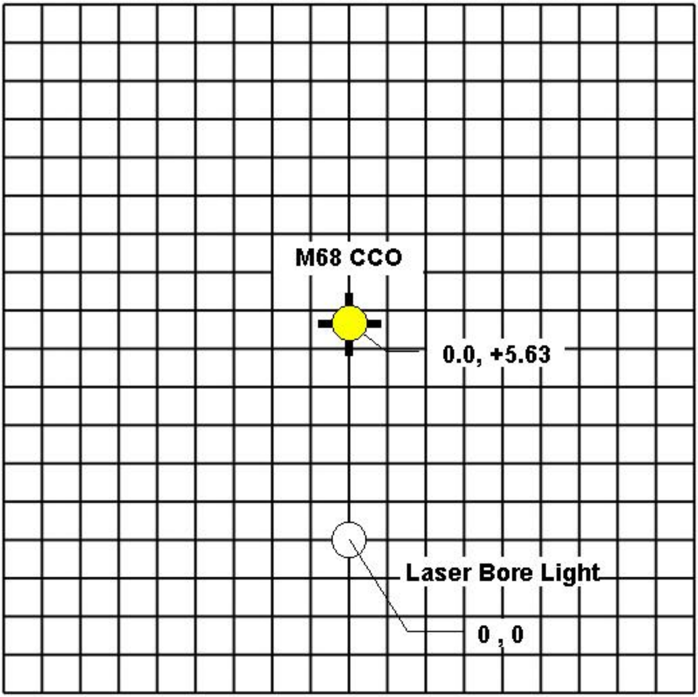
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-M68 CCO Mtd on M16 MWS Receiver Rail with out Half Moon Spacer



Zero Target Data for M16 MWS

1. Stabilize Weapon.
2. Aim CCO at the dot cross hair.
3. Adjust the CCO until the laser borelight is centered on its dot.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.





Installation Instructions Appear on the Following Pages

Note: Top photo depicts the MWS M203 installed on a M16A4 with M5 Adapter Rails and M203 Quick Attach Bracket. Bottom photo shows a MWS M203 on the M4 Carbine with M4 Adapter Rails and M203 Quick Attach Bracket installed. The quick attach/release M203 is installed on both weapons in the same manner, with exceptions pointed out on the following pages.

Principle of the Five-Position Shim Plate

The five-position shim plate prevents the M203 from sliding forward on the host weapon.

The basic overall length between the barrel nut roll pin at the rear of the M203 receiver, and the starting position shim plate cutout surface at the front, is approximately 11 inches. Some sliding motion may be detectable between the carbine barrel shoulder and the front of the five-position shim plate at the starting, or minimum, overall length cutout position.

Subsequent re-insertion of the five-position shim plate to its #2, #3, #4, or maximum (fifth) length position will slightly increase the overall length of the assembly beyond the basic 11 inches, and therefore tend to minimize or eliminate any sliding motion between the barrel shoulder and the five-position shim plate.

At some point, the unit armorer will note that the shim plate will not fit into the cutout of the carbine barrel shoulder. At this point, go back to the next lowest position and secure, close, and lock the bracket around the carbine.

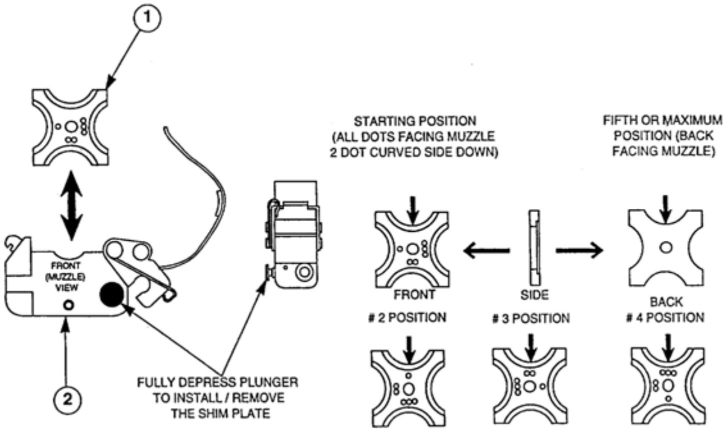
The following steps describe checking for sliding motion with the next or #2 notch up, and against the carbine barrel shoulder. If the #2 position does not minimize the sliding motion, repeat the procedure with the #3 notch up and so on. If the fifth or maximum position is desired, note that the "back" or smooth face of the shim plate is oriented towards the muzzle. Do not be concerned if only a small amount of sliding motion is still detectable with the shim plate in its apparently optimum setting, because the latch arm will compensate for this when it is closed and locked.

NOTE:

Endurance testing indicated that it may be necessary to switch to another shim plate position after several thousand rounds have been fired. The unit armorer should check for excessive sliding motion each time the shim plate is removed and the M203 re-mounted to the weapon.

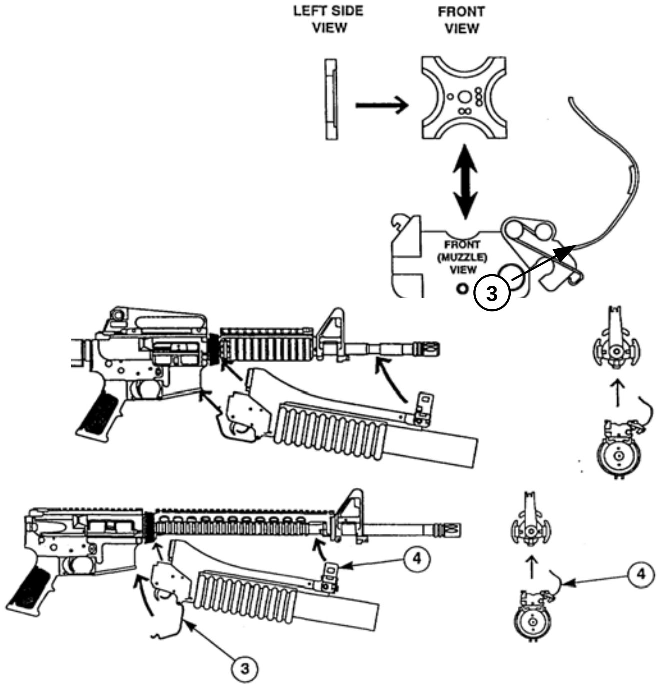
1. Follow the steps as described in paragraph two's illustration to attach the quick release bracket (1) to the M203.

2. Compare the illustration below with the quick release bracket (2) for the purpose of familiarization with all positions of the five-position shim plate.



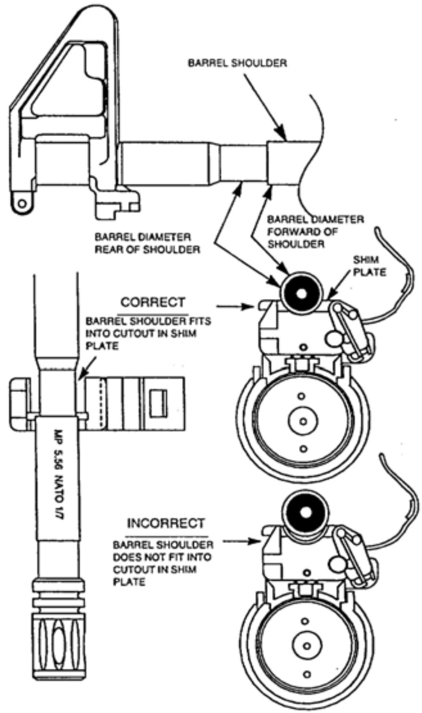
3. Set the five position in the bracket to the minimum position as illustrated, with the 2 dots down and facing the muzzle.

4. Remove the lower hand guard of the rail adapter system from the weapon. Move the rear of the M203 received into position around the barrel. Rotate the M203 trigger guard to engage the lip of the magazine well. Confirm that the latch arm of the bracket is fully open. Rotate the muzzle end of the M203 towards the barrel while sliding the M203 firmly to the rear. Confirm that the roll pin in the rear of the M203 receiver engages the barrel nut at the six o'clock position notch.



5. Firmly hold the M203 in position/back against the barrel nut of the weapon, while also holding the muzzle end of the M203 against the weapon's barrel. (For the M4 Carbine inspect the five-position shim plate, looking from the top of the carbine barrel, and also from the front, as illustrated at right.) The inner notch of the shim plate should rest behind the shoulder of the barrel.

6. Now, try to slide the M203 back and forth if possible, and note the distance of any sliding motion. Some motion will be detectable with most carbine barrels with the shim plate in its starting position. If during this step the cutout in the shim plate does not fit behind the barrel shoulder, it is most probably inserted at its maximum thickness (no dots facing the muzzle), or position #2, #3, or #4 (refer to step 2).



7. Remove the M203 w/quick release bracket from the weapon. Move the retaining spring, depress the plunger (4), withdraw the shim plate and re-insert it in the #2 position. Note that the #2 position is indicated by a single dot stamped on its shim plate cutout, and that this side of the shim plate faces the muzzle.

8. Re-mount the M203 w/quick release bracket to the weapon's barrel nut and barrel shoulder. (Carbine: without unlatching the bracket, ensure the cutout in the shim plate's #2 position fits behind the carbine's barrel shoulder). Attempt to slide the M203 from front to rear.

9. If forward and back motion is detected, repeat steps 6 & 7, reinsert the spacer with the #3 notch against the weapon barrel. If the assembly is now too long (it will not engage behind the barrel shoulder, but rides up onto the barrel's major diameter), go back to the last position tried with the shim plate and complete the M203 attachment. When the optimum position of the shim plate is established:

   a. Rotate the latch arm over the weapon barrel. (**Note**: Carbine barrel is depicted below.)

   b. Catch the hook in the hole of the latch arm.

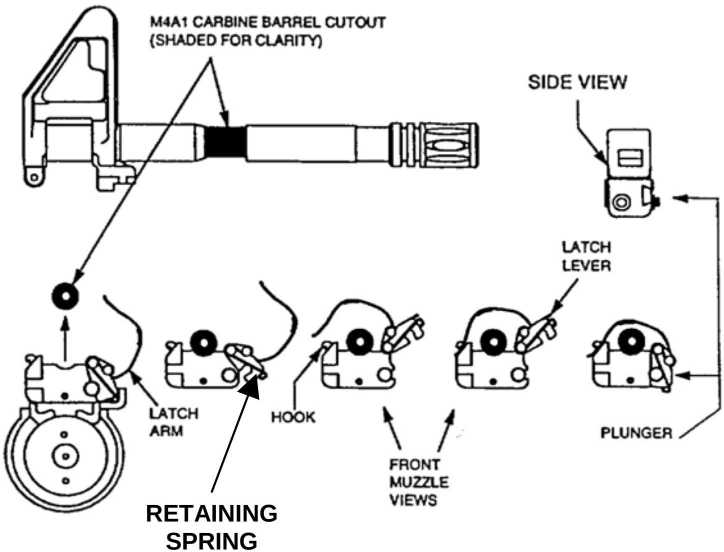
   c. Rotate the latch lever down.

   d. Move the retaining spring and depress the plunger.

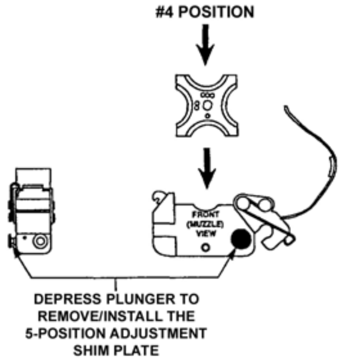
   e. Squeeze the latch lever fully closed (which allows the plunger to be released and snap forward). This will hold the latch lever in the fully closed/locked position.

NOTE

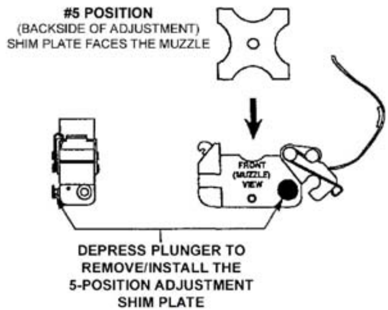
In its final motion, the latch lever may require very firm pressure against the bracket to allow the plunger to snap back into place, locking the latch lever closed. In some instances, finger pressure alone against the latch lever will not be sufficient to fully close it. When this occurs, use the side of the bayonet stud for extra leverage against the latch lever.



1. If forward and back motion is detected with the shim plate set to its #3 notch, remove the M203 from the carbine. Remove and re-insert the shim plate in the #4 position. **Note that the #4 position is indicated by three dots stamped adjacent to its shim plate cutout, and that this side of the shim plate faces the muzzle.**



10, If the #5 or maximum position is required, insert the shim plate as illustrated at right.



CAUTION

When detaching the M203 for cleaning, inspection, or lubrication, check and note the position of the shim plate for ease of re-attachment.



MWS/M203 – AN/PAQ-4B/C Mounting Instructions

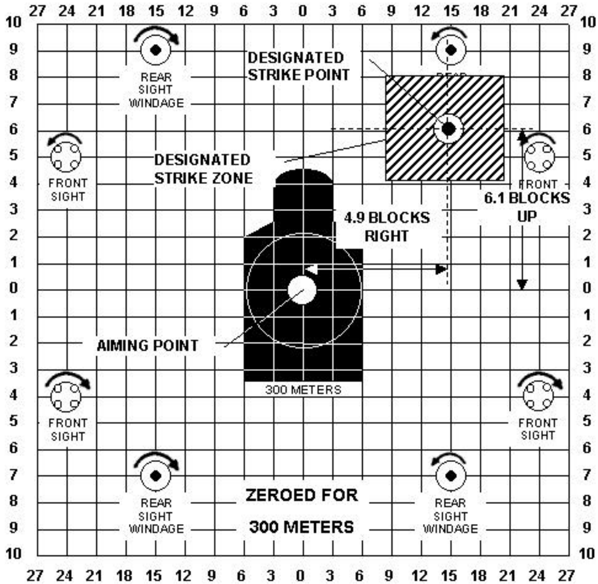
The AN/PAQ-4B/C is mounted on the left side rail using the Bracket Assembly (NSN 5340-01-390-3812) depicted in the diagram at left.

1. Mount the bracket adapter to the AN/PAQ-4B/C (1) using the thumbscrew on the AN/PAQ-4B/C.
   Note: Knob on the rail grabber/mount should be pointing up when installation is complete.
2. Loosen the clamping knob (3) until the rail grabber/mount has sufficient space to fit over the left side rail (2). Tighten the clamping knob until two clicks are heard.
3. The AN/PAQ-4B/C may be placed at whichever position on the left side rail is most convenient for the operator. If however the AN/PAQ-4B/C is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.
4. Install the remote switch (4) in a convenient location using the provided cable hangers.

NOTE: M203 Leaf Sight removed to provide a clearer picture of the installation of the AN/PAQ-4B/C

M4-M203 MWS with AN/PAQ-4 mounted on left side rail with Bracket Assembly

25 METER ZEROING TARGET
M16A2/M16A4



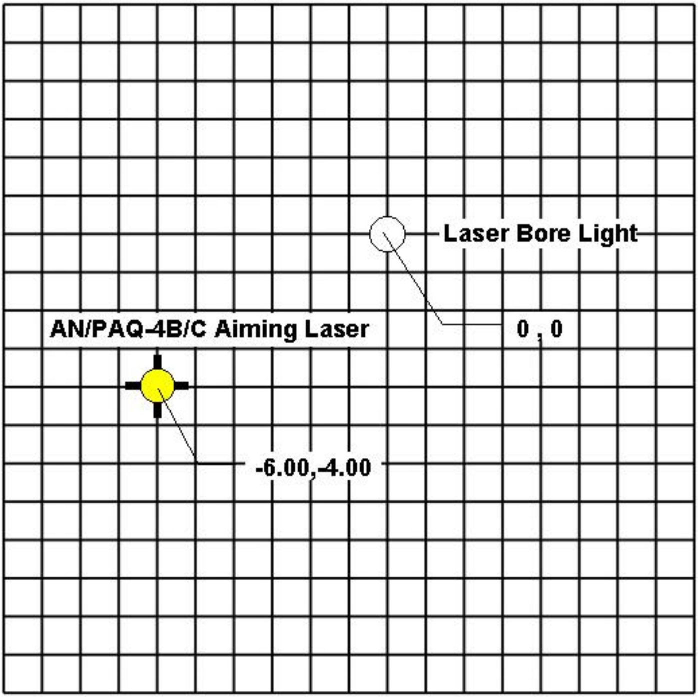
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PAQ-4B/C on M4/M203 MWS Left Side Rail with Bracket Assembly



Zero Target Data for M4/M203 MWS

1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

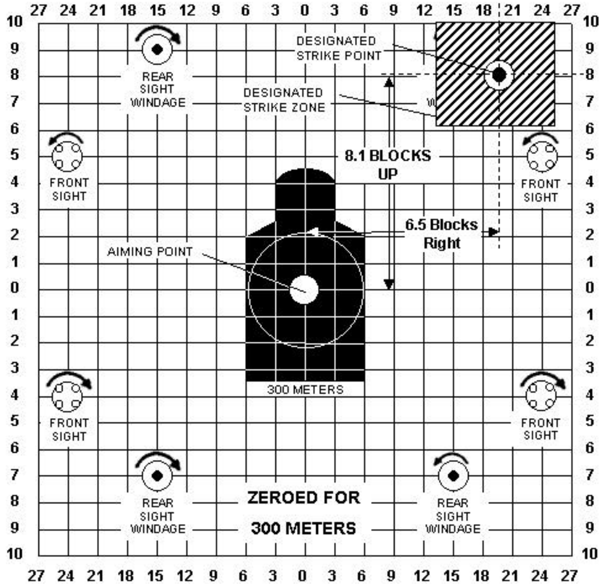
10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

M16A4-M203 MWS with AN/PAQ-4 mounted on left side rail with Bracket Assembly

25 METER ZEROING TARGET
M16A2/M16A4



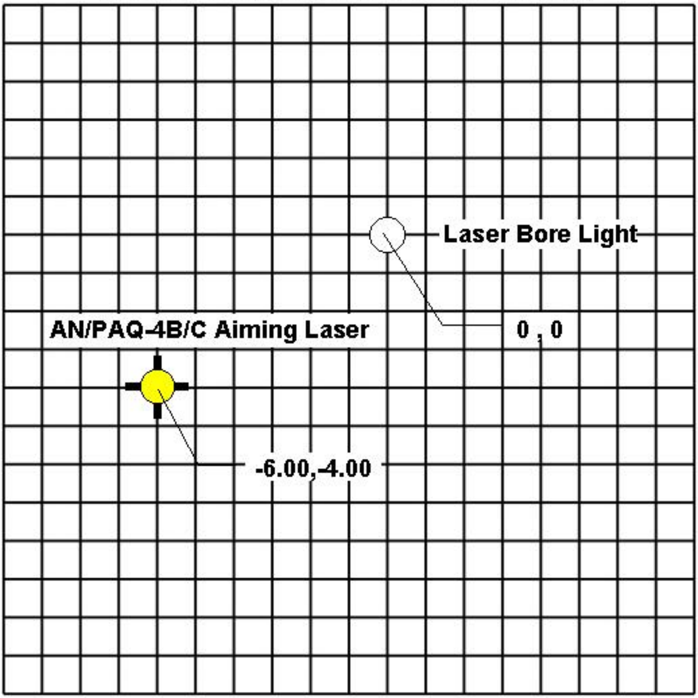
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PAQ-4B/C on M16/M203 MWS Left Side Rail with Bracket Assembly



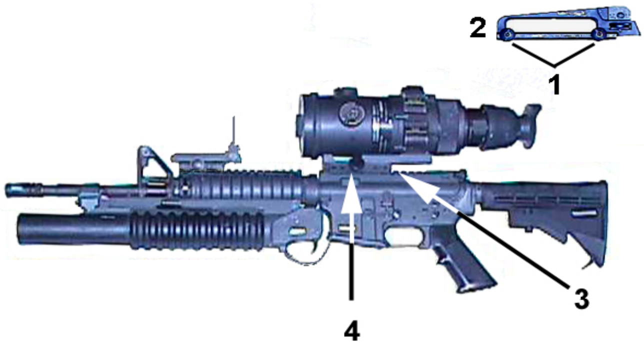
Zero Target Data for M16/M203 MWS

1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

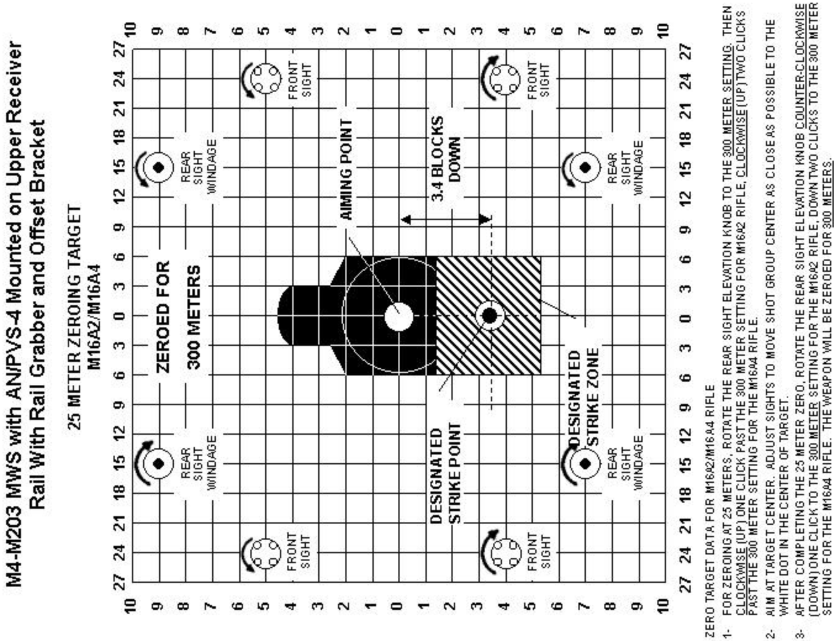
Grids are 1cm wide by 1cm high. Units must locally manufacture.



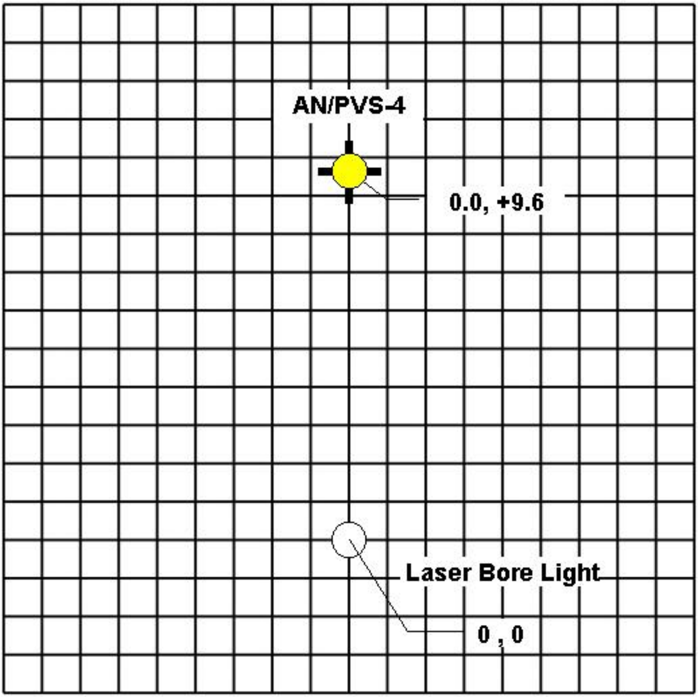
MWS – AN/PVS-4 Mounting Instructions

In order to properly mount the AN/PVS-4 to the MWS the unit Armorer must first install a spacer (NSN 5365-01-447-8991) and a rail grabber/mount (NSN 5340-01-449-8533) on the AN/PVS-4.

1. Loosen two knobs (1) on carrying handle (2). Remove carrying handle from upper receiver rail (3). Retain carrying handle.
2. Loosen the clamping knob (4) until sufficient space exists to place the clamping jaws on either side of the upper receiver rail (3). Tighten torque-limiting knob (4) until two clicking sounds are heard.
3. The AN/PVS-4 may be placed at whichever rail-cross slot on the upper receiver rail is most convenient for the operator, as long as the rail grabber/mount does not extend beyond the rail.
4. If the AN/PVS-4 is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.


M4-M203 MWS with AN/PVS-4 Mounted on Upper Receiver Rail With Rail Grabber and Offset Bracket
25 METER ZEROING TARGET
M16A2/M16A4
ZEROED FOR 300 METERS
AIMING POINT
3.4 BLOCKS DOWN
DESIGNATED STRIKE POINT
DESIGNATED STRIKE ZONE
REAR SIGHT WINDAGE
FRONT SIGHT
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE
1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.
3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PVS-4 Mtd on M4/M203 MWS Receiver Rail with Spacer and Rail Grabber



Zero Target Data for M4/M203 MWS

1. Stabilize Weapon.
2. Aim AN/PVS-4 at Cross Hair and adjust until the borelight strikes the Laser Borelight Dot.

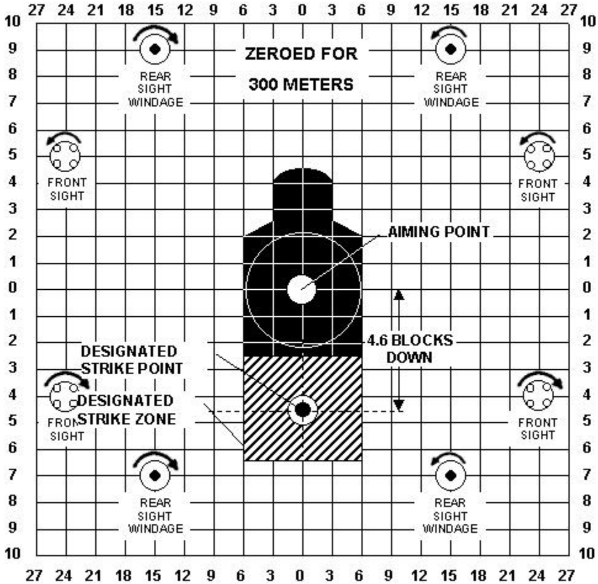
10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

M16A4-M203 MWS with AN/PVS-4 Mounted on Upper Receiver Rail With Rail Grabber and Offset Bracket

25 METER ZEROING TARGET
M16A2/M16A4



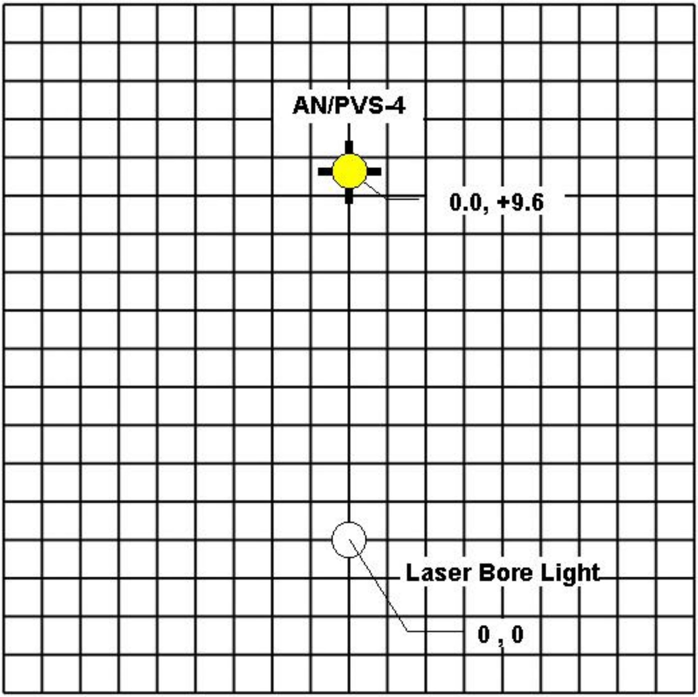
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PVS-4 Mtd on M16/M203 MWS Receiver Rail with Spacer and Rail Grabber



Zero Target Data for M16/M203 MWS

1. Stabilize Weapon.
2. Aim AN/PVS-4 at Cross Hair and adjust until the borelight strikes the Laser Borelight Dot.

10 Meter Bore Sight Target for 300m Zero
(13 Dec 99)

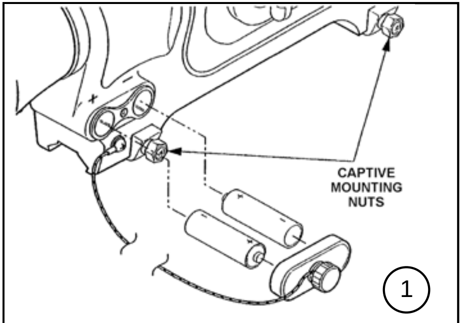
US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

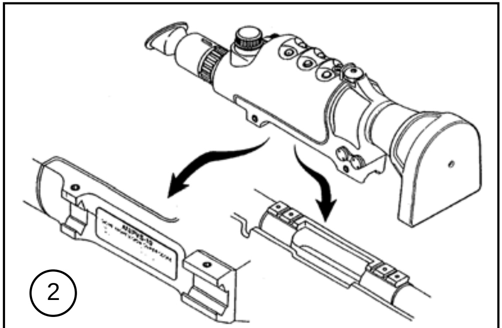
M24 System Diagram



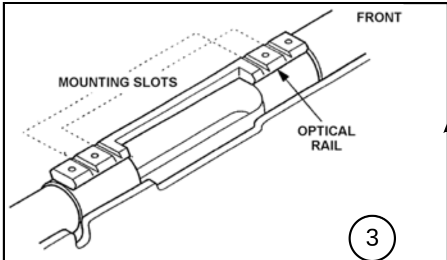
M24—AN/PVS-10, Sight, Night Vision Sniper Scope Mount Procedures



Mounting Base of the SNS



Mounting Base of SNS



Mounting Slots

M24 – AN/PVS-10 Mounting Instructions

1. Before mounting the SNS, lubricate the threads of each mounting nut with Cleaner Lubricant Preservative (CLP) (NSN: 9150-01-102-1473)

2. Ensure smooth movement of each captive mounting nut and clamp. (Figure 1)

3. Inspect for burrs and foreign matter between each nut and clamp. Burrs or foreign matter must be removed prior to mounting.

4. Mount the SNS to the optical rail of the M24. (See Figure 2).

5. Align the square spline in the mounting base of the SNS in one of the two corresponding cross-slots of the optical rail. (See Figure 3).

6. Mount the front and rear clamps against the base. Finger tighten the mounting nuts.

7. Remove eyepiece protection cap and install eyeguard.

8. Check the eye relief. If the sight needs to be adjusted, loosen the mounting nuts and align the square spline with the other set of slots on the optical rail and repeat step 6.

9. Tighten the rear-mounting nut to 65 inch-pounds using the T-handle torque wrench.

10. Tighten the front mounting nut to 65 inch-pounds using the T-handle torque wrench.

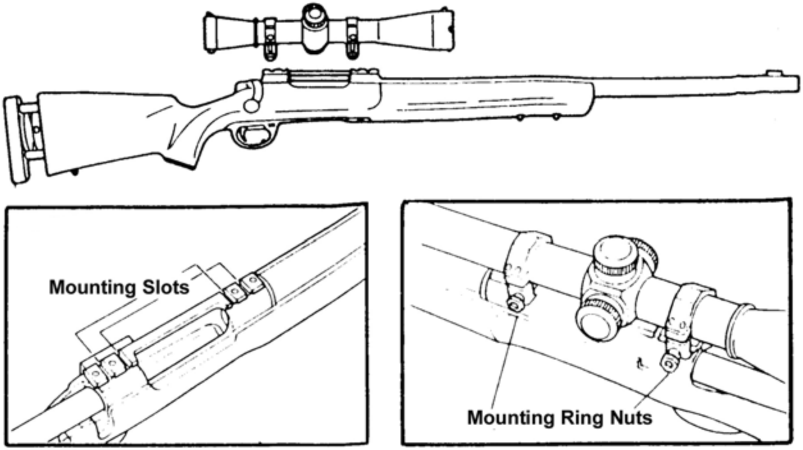
11. Repeat steps 9 and 10 for a total of three (3) cycles.

12. The T-handle Torque wrench is not provided with the AN/PVS-10 Sniper Night Scope. The wrench is provided with the M24 Sniper Weapon System Deployment Kit.

M24—AN/PVS-10 Zero Procedure

There is a slight deviation between day and night zero point of .5 MOA.

1. Assume a good prone supported position 100 meters away from the target.
2. Verify SNS is in Day mode, uncover the objective lens and if eyeguard is not installed, remove the eyepiece protective cap.
3. Adjust the windage and elevation dials as needed to precisely zero the rifle for optimum performance on the target.
4. Fire three rounds maintaining the same aim point each time.
5. After placement of the rounds has been noted, turn the elevation and windage dials to make the needed adjustments to the sight.
6. Repeat this process until a 3-round group is centered on the aim point.
7. Once the shot group is centered, loosen the setscrews on the elevation dial. Slip the elevation dial to the index line marked "0". Retighten the setscrews.
8. After zeroing at 100 meters, confirm this zero out to 300 meters at 100-meter increments.


Mounting Slots
Mounting Ring Nuts

M24--DAY OPTIC SIGHT MOUNTING INSTRUCTIONS

(See TM 9-1005-306-10)

WARNING

Be sure the mounting base is fastened securely to the rifle. Loose mounting may cause the day optic sight and base mount assembly to come off the rifle when firing, possibly injuring the shooter.

1. Before mounting the day optic sight, lubricate the threads of each mounting nut.
2. Insure smooth movement of each mounting nut and mount claw.
3. Inspect for burrs and foreign matter between each mounting ring nut and mount claw. Burrs or foreign matter must be removed prior to mounting.
4. Mount the day optic sight and rings to the base (See diagram)

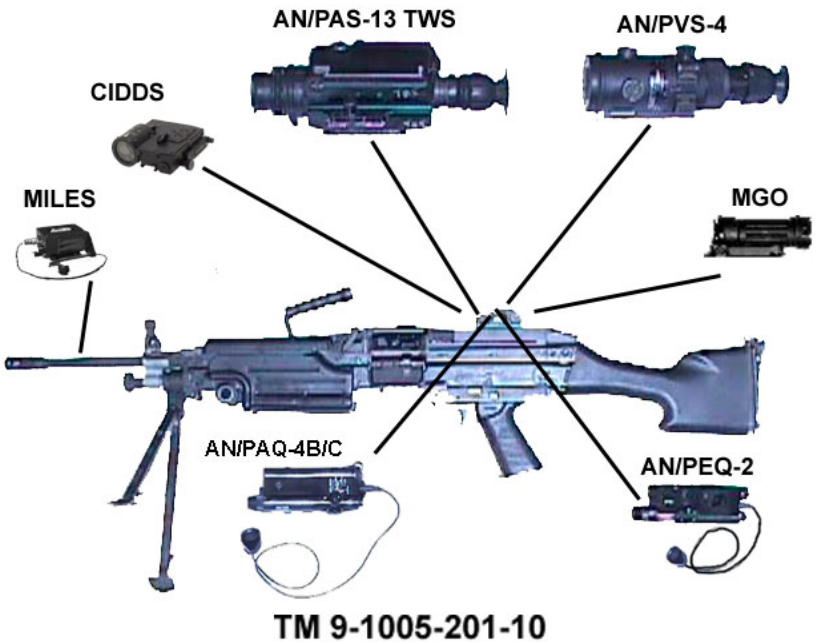
NOTE

There are two sets of mounting slots. Select the set of slots that provide the proper eye relief. Once a set of slots is chosen, the same set should always be used in order for the system to retain zero. Ensure mounting surface of base is free of dirt, oil or grease.

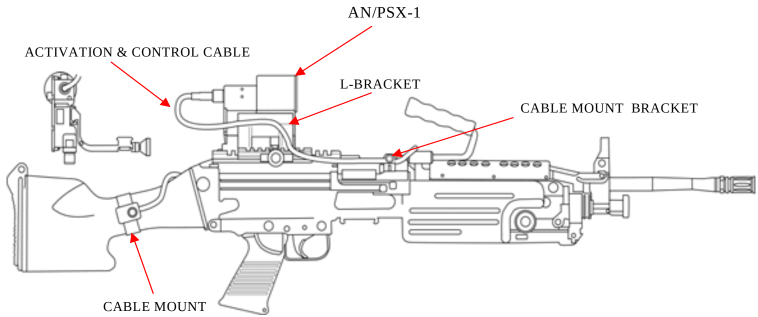
5. Set each ring bolt spline in the selected slot
6. Slide the rear mount claw against the base. Finger tighten the mounting ring nut.
7. Slide the front mount claw against the base. Finger tighten the mounting ring nut.

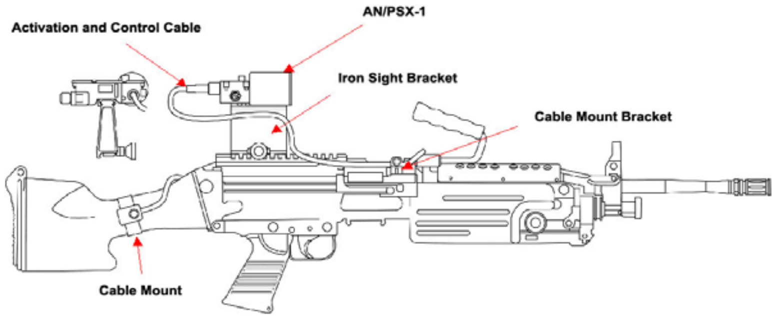
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M249 Machine Gun System/Squad Automatic Weapon Diagram



M249—AN/PSX-1 (CIDDS) Mount Procedure



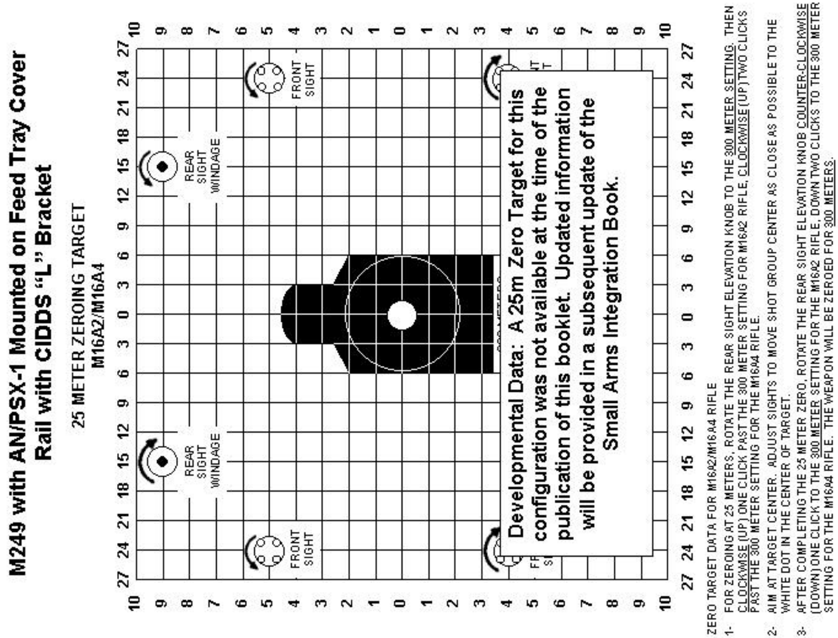


M249 - AN/PSX-1 Interrogator Set Mounting Instructions

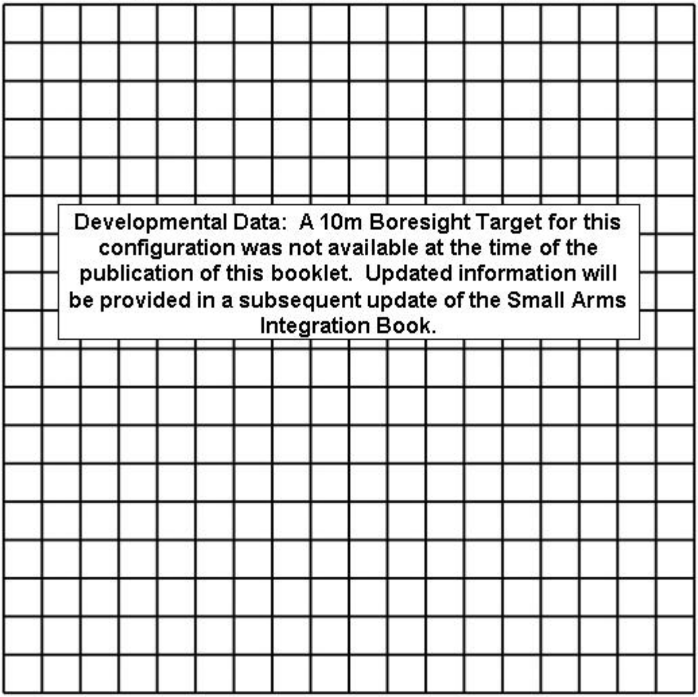
The AN/PSX-1 Interrogator Set requires the installation of the TWS - M249 mounting bracket assembly (Part No. A3170615-1) to the M249 feed tray cover, per TM 11-5855-302-12&P, unless the M249 is equipped with the M249 Integrated Feed Tray Cover Rail.

1. The AN/PSX-1 Interrogator Set is mounted on the M249 MG using either the L-Bracket (Part No. 6451507), when AN/PSX-1 is used with an auxiliary sight, or the Iron Sight Bracket (Part No. 6451508), when AN/PSX-1 is used with open sights.
2. Attach L-Bracket (Part No. 6451507) or Iron Sight Bracket (Part No. 6451508) on top of the top cover rail of the M 249 or TWS mounting bracket.
3. Secure the AN/PSX-1 to the rail with the rail grabber-clamping knob. On the L-Bracket, the AN/PSX-1 is installed vertically, on the Iron Sight Bracket, the AN/PSX-1 is installed horizontally.
4. Using AN/PSX-1 (CIDDS) cable mount assembly (Part No. 6451531) attach cable to back of AN/PSX-1, the forward cable bracket next to the carrying handle, and the rear cable bracket with Velcro straps to the buttstock.

M249—AN/PSX-1 Zero and Boresight Targets (L-Bracket)



10 Meter Boresight Tgt-AN/PSX-1 Mtd on M249 Feed Tray Cover Rail CIDDS "L" Bracket

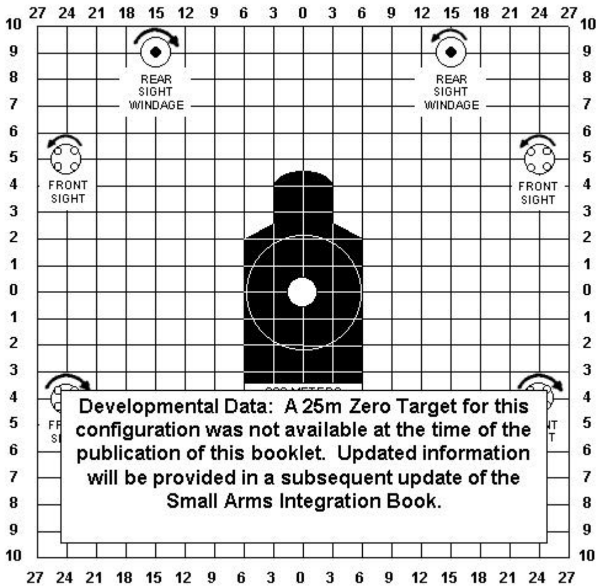


Grids are 1cm wide by 1cm high. Units must locally manufacture.

M249—AN/PSX-1 Zero and Boresight Targets (Open Sight Bracket)

M249 with AN/PSX-1 Mounted on Feed Tray Cover Rail with CIDDS "Open Sight" Bracket

25 METER ZEROING TARGET
M16A2/M16A4



ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

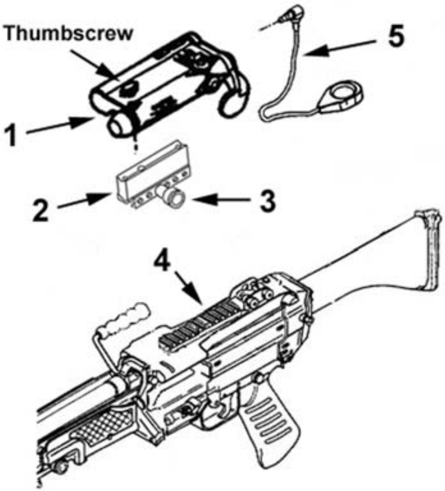
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PSX-1 Mtd on M249 Feed Tray Cover Rail CIDDS "Open Sight" Bracket

Developmental Data: A 10m Boresight Target for this configuration was not available at the time of the publication of this booklet. Updated information will be provided in a subsequent update of the Small Arms Integration Book.

Grids are 1cm wide by 1cm high. Units must locally manufacture.

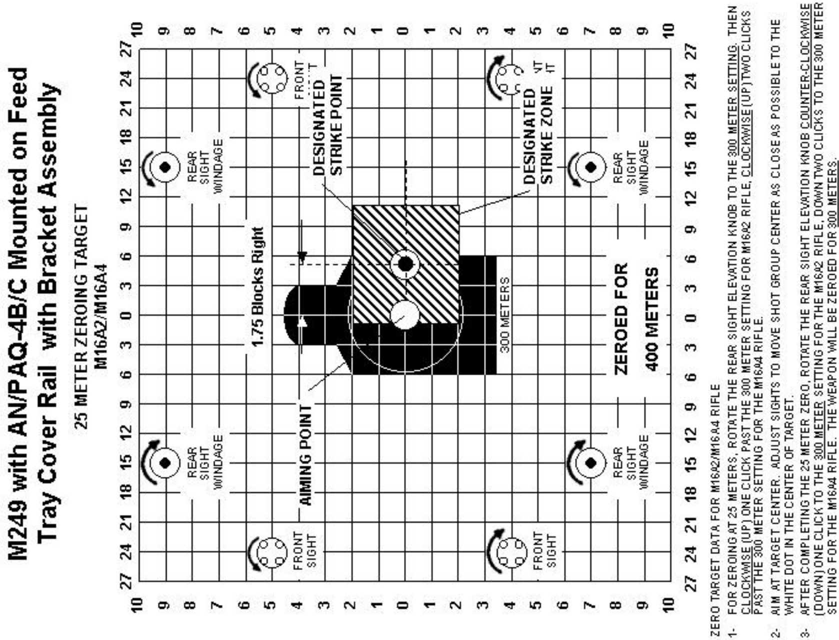


M249 – AN/PAQ-4B/C Mounting Instructions

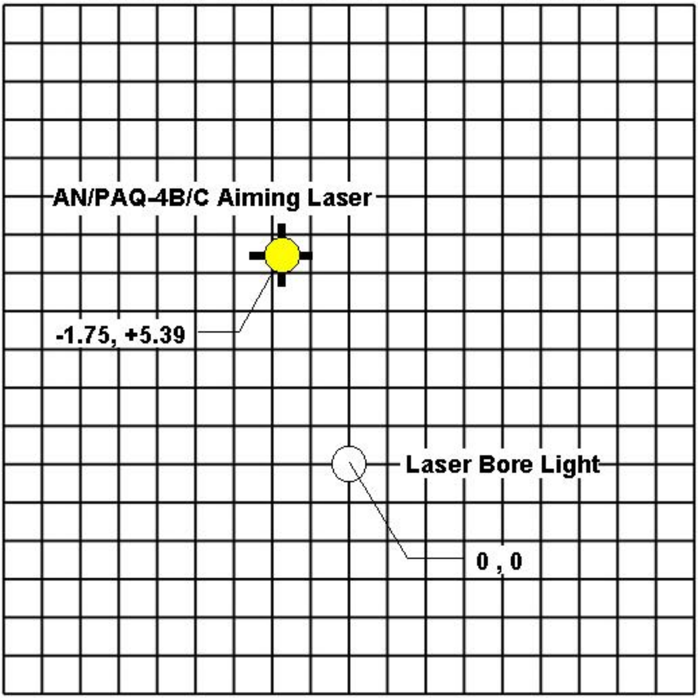
The AN/PAQ-4B/C (1) is mounted on the feed tray cover rail using Bracket Assembly (2) (NSN 5340-01-390-3812) depicted in the diagram at left.

1. Attach the Bracket Assembly to the AN/PAQ-4B/C (1) using the thumbscrew on the AN/PAQ-4B/C.
2. Loosen the clamping knob (3) until the rail grabber has sufficient space to fit over the top cover rail (4). Tighten the clamping knob until two clicks are heard.
3. The AN/PAQ-4B/C may be placed at whichever position on the rail is most convenient for the operator. If however the AN/PAQ-4B/C is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.
4. Install the remote switch (5) in a convenient location using the provided cable hangers.

M249—AN/PAQ-4B/C Zero and Boresight Targets, Feed Tray Cover Rail



10 Meter Boresight Tgt-AN/PAQ-4B/C Mtd on M249 Feed Tray Cover Rail with Bracket Assembly



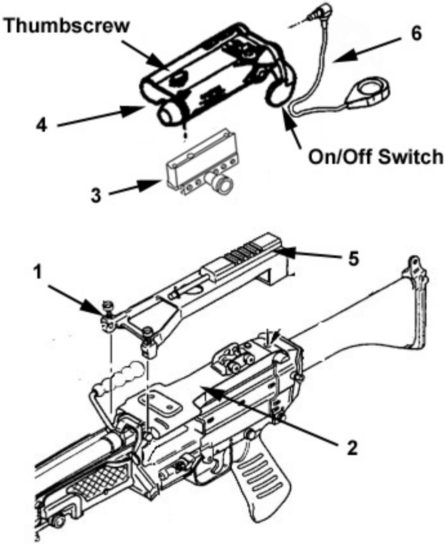
Zero Target Data for M249

1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

10 Meter Bore Sight Target for 400m Zero

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



M249 – AN/PAQ-4B/C Mounting Instructions Using AN/PAS-13, TWS Mounting Bracket

Install the TWS – M249 mounting bracket assembly (Part No. A3170615)-(1) to the M249 feed tray cover (2), per TM 11-5855-302-12&P

1. Attach Bracket Assembly (3) (NSN 5340-01-390-3812) depicted in the diagram at left to the AN/PAQ-4B/C (4).

2. Loosen knob on AN/PAQ-4B/C rail grabber/ mount (plastic).

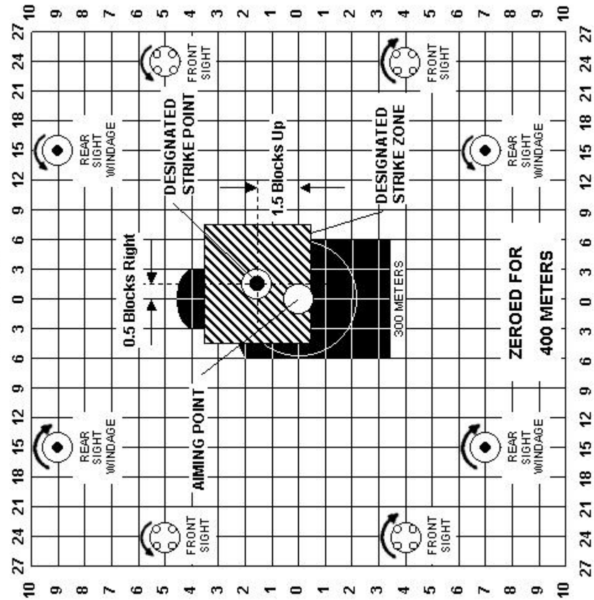
3. Select slot on rail (5) for mounting. Any slot may be used as long as the mount does not hang over the edge of the rail.

4. Place bar of rail grabber/mount (3) in slot of rail (5) and hand tighten knob on mount until two clicks are heard.

5. Attach the remote switch (6) to the device and locate it on a convenient location on the weapon for the shooter.

M249 with AN/PAQ-4B/C Mounted on M249—TWS Feed Tray Cover Bracket with Bracket Assembly

25 METER ZEROING TARGET
M16A2/M16A4



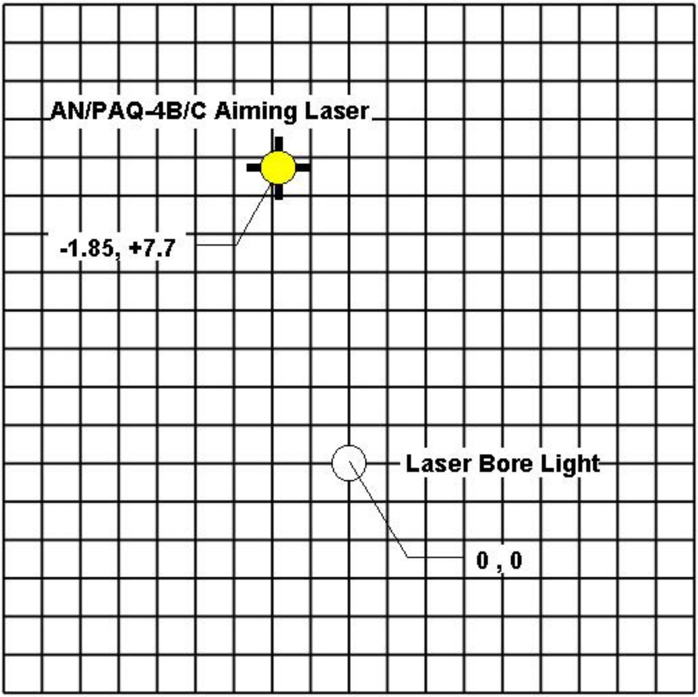
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PAQ-4B/C on M249--AN/PAS-13 Feed Tray Cover Bracket with Bracket Assembly



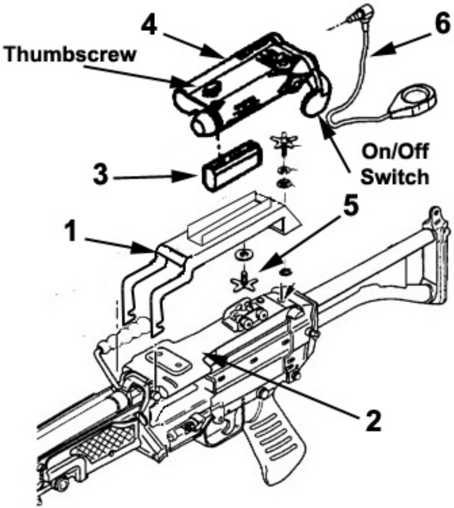
Zero Target Data for M249

1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

10 Meter Bore Sight Target for 400m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



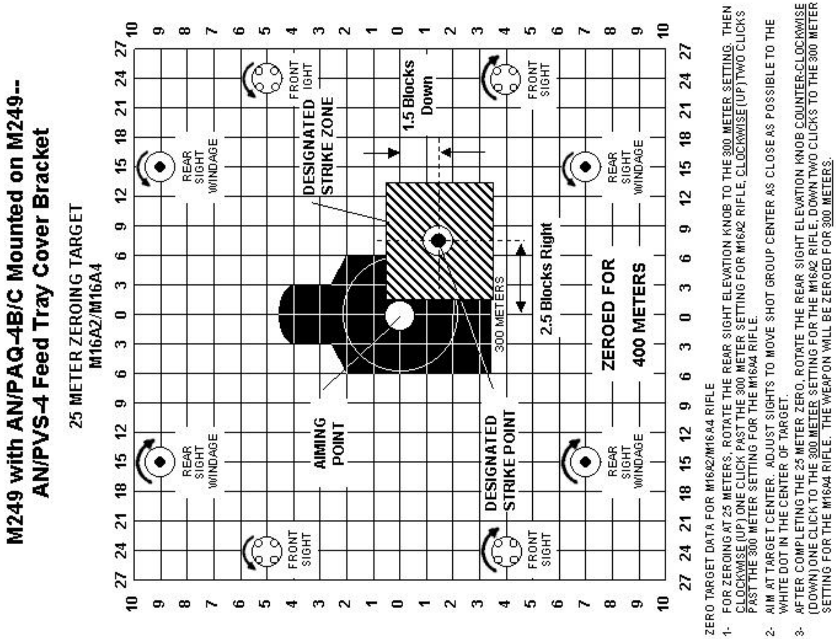
M249 – AN/PAQ-4B/C Mounting Instructions Using an AN/PVS-4 Mounting Bracket

The AN/PAQ-4B/C may also be attached to the M249 using the mounting bracket intended to mount the AN/PVS-4 onto the M249, as detailed below:

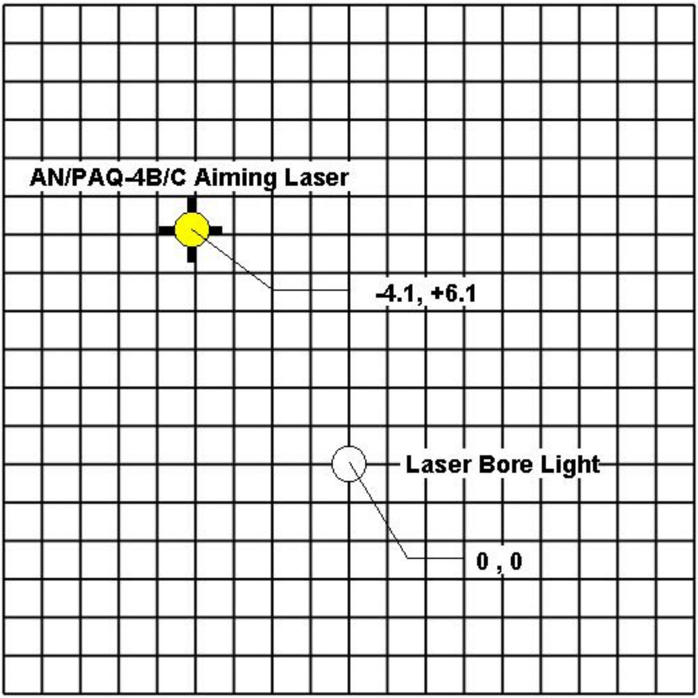
1. Install the AN/PVS-4 – M249 mounting bracket (1) to the M249 feed tray cover (2), per TM 11-5855-213-10
2. Attach Bracket Adapter (3) to AN/PAQ-4B/C (4).
3. Attach AN/PAQ-4B/C, with bracket adapter attached, to the mounting bracket (1) using the AN/PVS-4 thumbscrew (5).
4. Attach the remote switch (6) to the device and locate it on a convenient location on the weapon for the shooter.

Note: Bracket Adapter is part number A3186952 as shown in TM 11-5855-308-12&P (DRAFT) dated 2 Mar 98.

M249—AN/PAQ-4B/C Zero and Boresight Targets (With AN/PVS-4 Mount)



10 Meter Boresight Tgt-AN/PAQ-4B/C Mtd on M249 with AN/PVS-4 Feed Tray Cover Bracket and Plastic Bracket Adapter



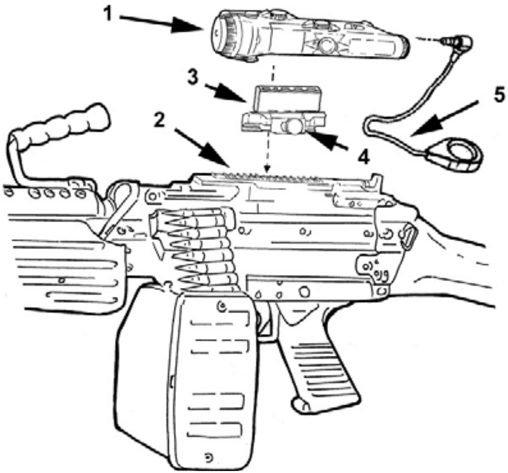
Zero Target Data for M249

1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

10 Meter Bore Sight Target for 400m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

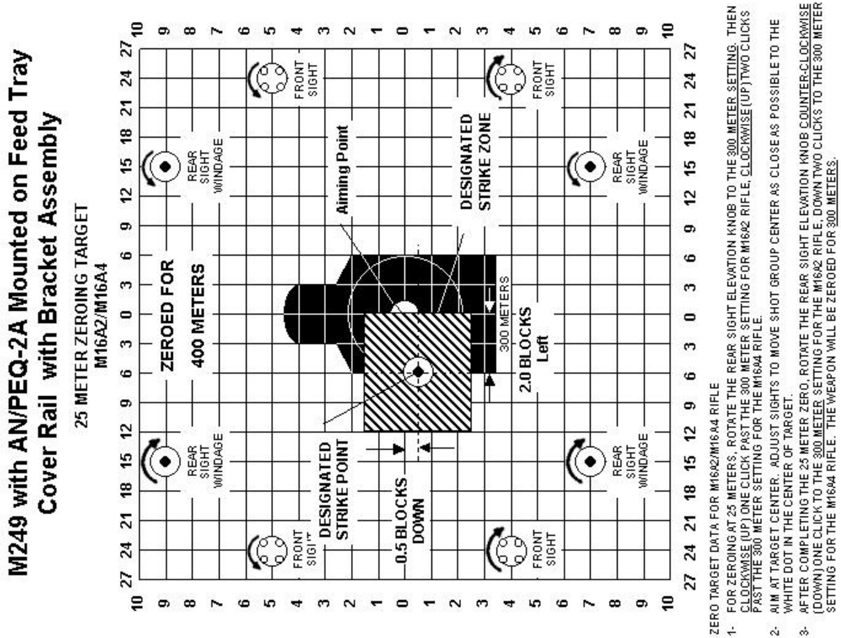
Grids are 1cm wide by 1cm high. Units must locally manufacture.



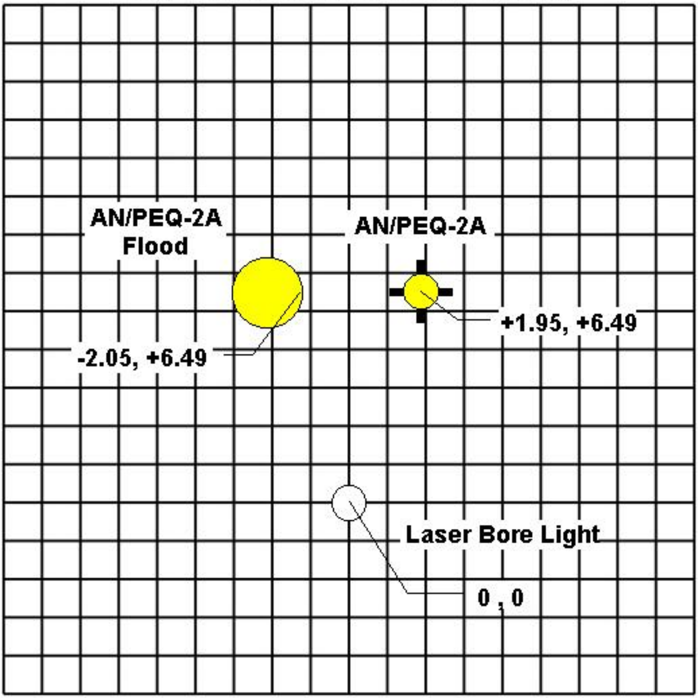
M249B – AN/PEQ-2A Mounting Instructions

The AN/PEQ-2A (1) is mounted on the top cover rail (2) with a Bracket Assembly (3) (NSN 5340-01-390-3812) depicted in the diagram at left.

1. Mount the Bracket Assembly (3) to the AN/PEQ-2A (1) using the thumbscrew on the AN/PEQ-2A.
2. Loosen the clamping knob (4) until the rail grabber has sufficient space to fit over the top cover rail (2). Tighten the clamping knob until two clicks are heard.
3. The AN/PEQ-2A may be on the rail wherever is most convenient for the operator. If removed, the operator must return the device to that same position in order to insure that zero is retained.
4. Install the remote switch (5) in a convenient location using the provided cable hangers.


M249 with AN/PEQ-2A Mounted on Feed Tray Cover Rail with Bracket Assembly
25 METER ZEROING TARGET
M16A2/M16A4
ZEROED FOR
400 METERS
REAR SIGHT WINDAGE
FRONT SIGHT
Aiming Point
DESIGNATED STRIKE ZONE
DESIGNATED STRIKE POINT
0.5 BLOCKS DOWN
2.0 BLOCKS Left
300 METERS
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE
1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING, THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.
3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PEQ-2A Mtd M249 Feed Tray Cover Rail with Bracket Assembly



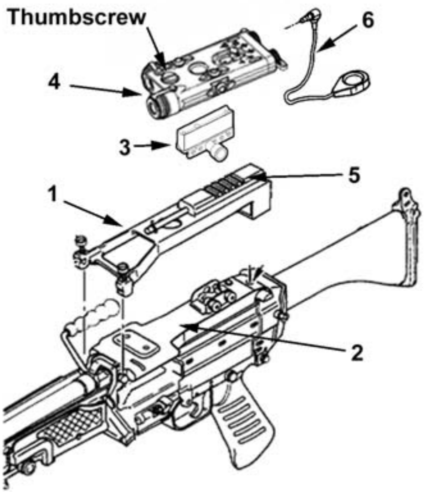
Zero Target Data for M249

1. Stabilize Weapon.
2. Align Laser Borelight on it's dot.
3. Adjust AN/PEQ-2A until aiming laser is centered on the dot cross hair.

10 Meter Bore Sight Target for 400m Zero

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

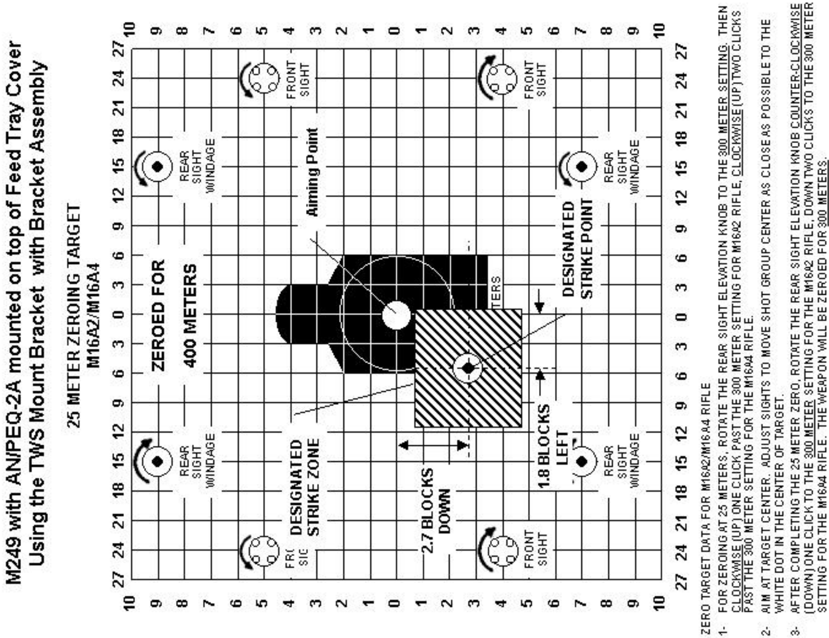


M249 – AN/PEQ-2A Mounting Instructions Using AN/PAS-13, TWS Mounting Bracket

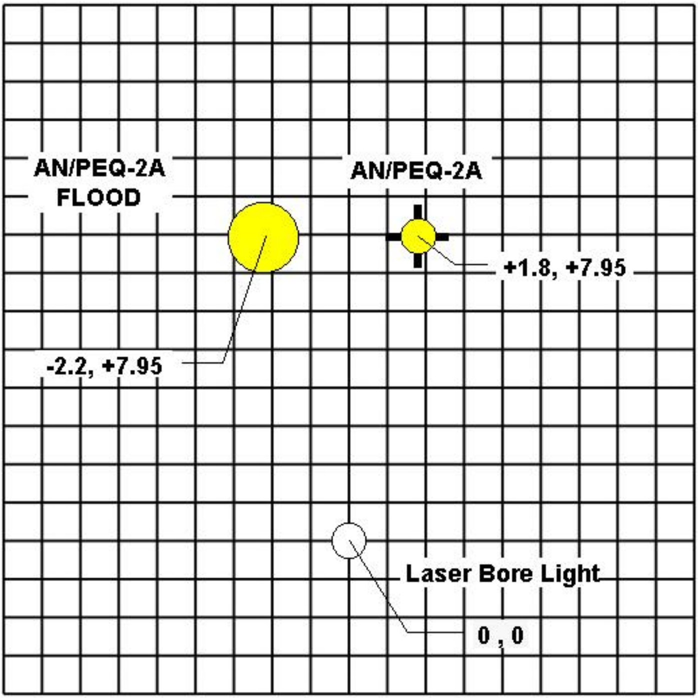
Install the TWS – M249 mounting bracket assembly (Part No. A3170615)-(1) to the M249 feed tray cover (2), per TM 11-5855-302-12&P

1. Mount the Bracket Assembly (3) (NSN 5340-01-390-3812) to the AN/PEQ-2A (4) using the thumbscrew on the AN/PEQ-2A.
2. Loosen the clamping knob on Bracket Assembly until there is sufficient space between the jaws to fit on either side of the rail.
3. Select a slot on rail (5) for mounting. Any slot may be used as long as the bracket assembly does not hang over the edge of the rail.
4. Place bar of rail grabber/mount (3) in slot of rail (5) and hand tighten knob on mount until two clicks are heard.
5. If desired, attach the remote switch (6) and fasten it at a convenient location with the provided cable hangers.

M249—AN/PEQ-2A Zero and Boresight Targets



10 Meter Boresight Tgt-AN/PEQ-2A Mtd on M249--AN/PAS-13 Feed Tray Cover Bracket with Bracket Assembly



Zero Target Data for M249

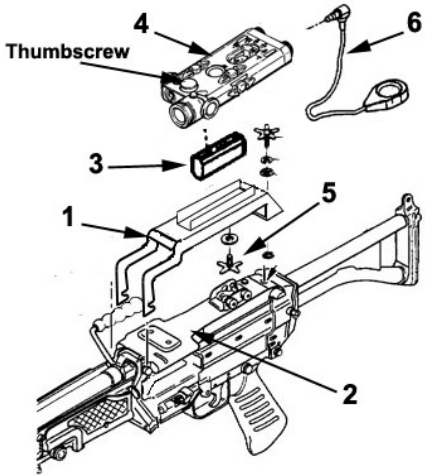
1. Stabilize Weapon.
2. Align Laser Borelight on it's dot.
3. Adjust AN/PEQ-2A until aiming laser is centered on the dot cross hair.

10 Meter Bore Sight Target for 400m Zero (13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

M249—AN/PEQ-2A Mount Procedures, Units without AN/PAS-13 (H/MTWS)



M249 – AN/PEQ-2A Mounting Instructions Using an AN/PVS-4 Mounting Bracket

1. Install the AN/PVS-4 – M249 mounting bracket (1) to the M249 feed tray cover (2), per TM 11-5855-213-10

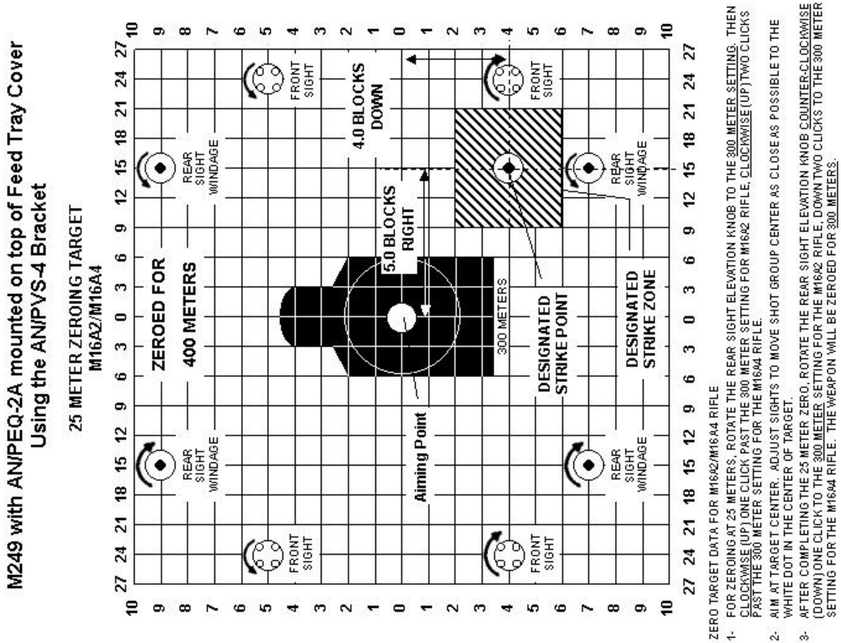
2. Attach Bracket Adapter (plastic) (3) to AN/PEQ-2A (4).

3. Attach AN/PEQ-2A, with bracket adapter attached, to the mounting bracket (1) using the AN/PVS-4 thumbscrew (5).

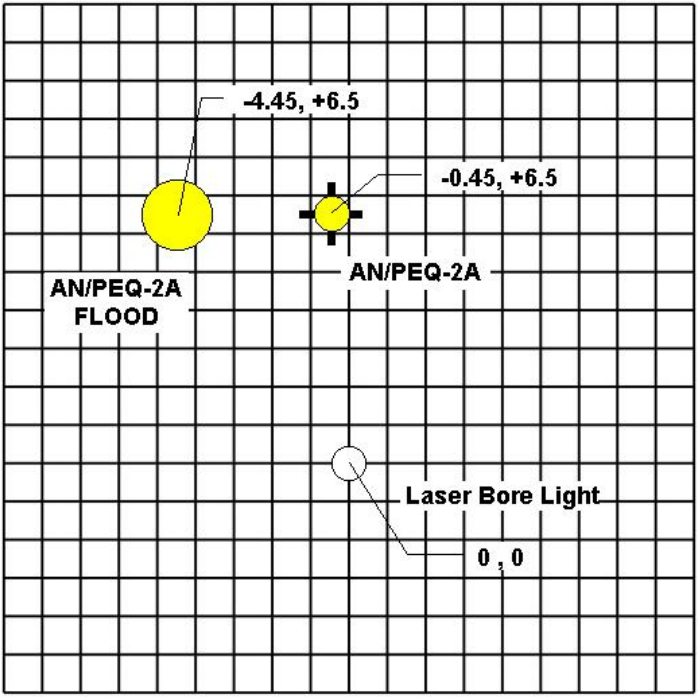
4. If desired, attach the remote switch and fasten it at a convenient location with the provided cable hangers.

Note: Bracket Adapter is part number A3186952 as shown in TM 11-5855-308-12&P (DRAFT) dated 2 Mar 98.

M249—AN/PEQ-2A Zero and Boresight Targets, (With AN/PVS-4 Mount)



10 Meter Boresight Tgt-AN/PEQ-2A Mtd on M249 –AN/PVS-4 Feed Tray Cover Bracket with Plastic Bracket Adapter



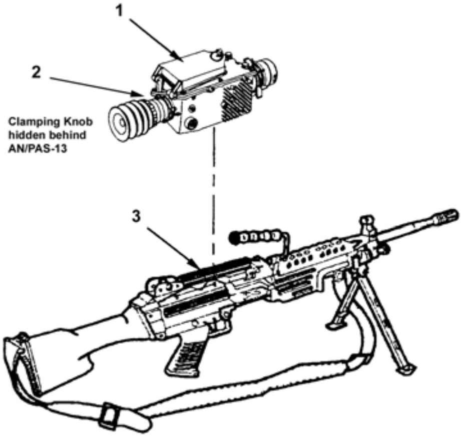
Zero Target Data for M249

1. Stabilize Weapon.
2. Align Laser Borelight on it's dot.
3. Adjust AN/PEQ-2A until aiming laser is centered on the dot cross hair.

10 Meter Bore Sight Target for 400m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

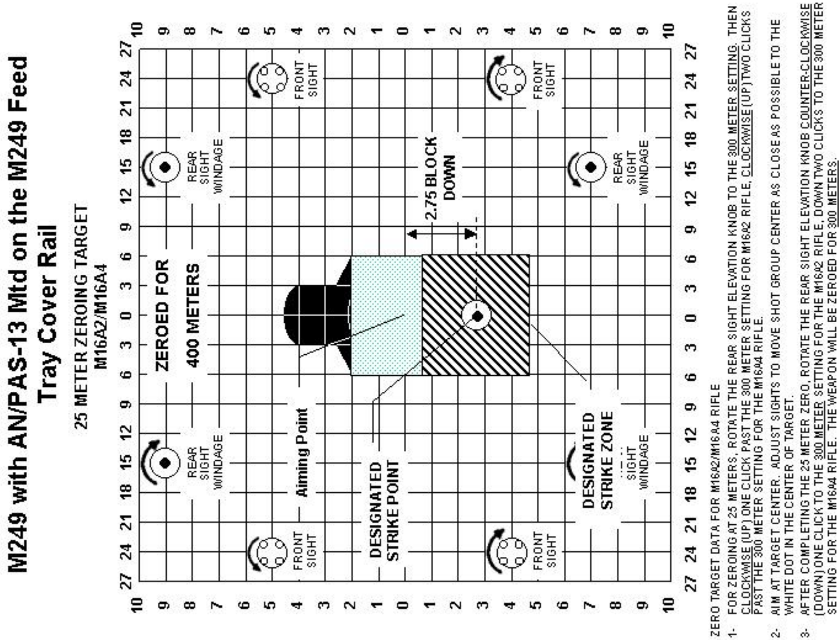
Grids are 1cm wide by 1cm high. Units must locally manufacture.



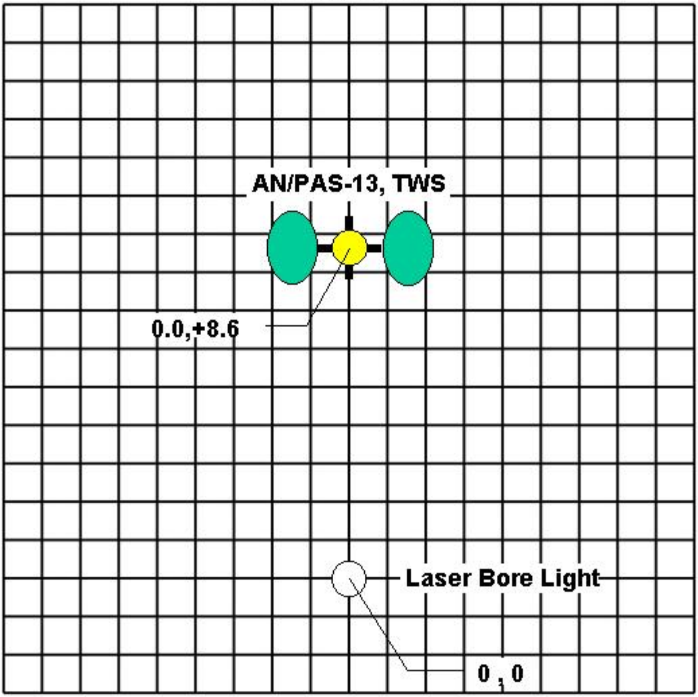
M249 – AN/PAS-13 TWS Mounting Instructions (See Annex B for Target Prep Instructions)

The AN/PAS-13 comes equipped with a spacer and torque limiting rail grabber that allow the device to be rapidly attached to a weapon rail.

1. To install the AN/PAS-13 (1) loosen the clamping knob (2) (hidden behind TWS) until sufficient space exits to place the clamping jaws on either side of the mounting rail (3). Tighten clamping knob (2) until two clicks are heard.
2. The AN/PAS-13 may be placed at position number 5 or back (counting from the back of the rail to the front) on the top feed tray cover rail, as long as the rail grabber does not extend beyond the rail. Should the device be installed forward of the number five slot the sight will interfere with the operator's ability to raise the barrel handle and the sight's objective lens will strike the weapon, when the feed tray cover is opened.
3. If the AN/PAS-13 is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.


M249 with AN/PAS-13 Mtd on the M249 Feed Tray Cover Rail
25 METER ZEROING TARGET
M16A2/M16A4
ZEROED FOR
400 METERS
REAR SIGHT WINDAGE
FRONT SIGHT
Aiming Point
DESIGNATED STRIKE POINT
2.75 BLOCK DOWN
DESIGNATED STRIKE ZONE
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE
1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.
3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PAS-13 Mtd on M249 Feed Tray Cover Rail



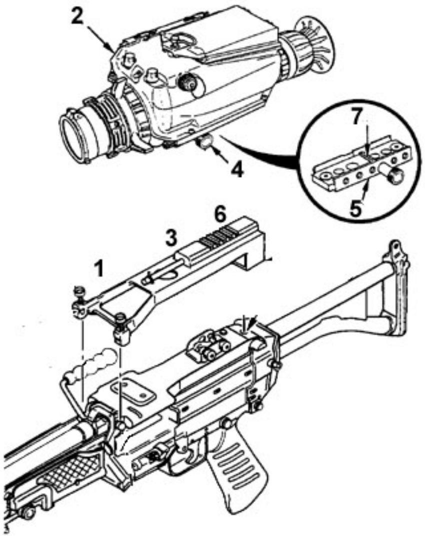
Zero Target Data for M249

10 Meter Bore Sight Target for 400m Zero

1. Stabilize Weapon.
2. Place Thermal signature material or tips of fingers on gray circles.
3. Aim between gray circles at cross-hair.
4. Adjust AN/PAS-13 until the borelight laser is centered on its dot.
5. You MUST zero reticle in both wide and narrow field of view.

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

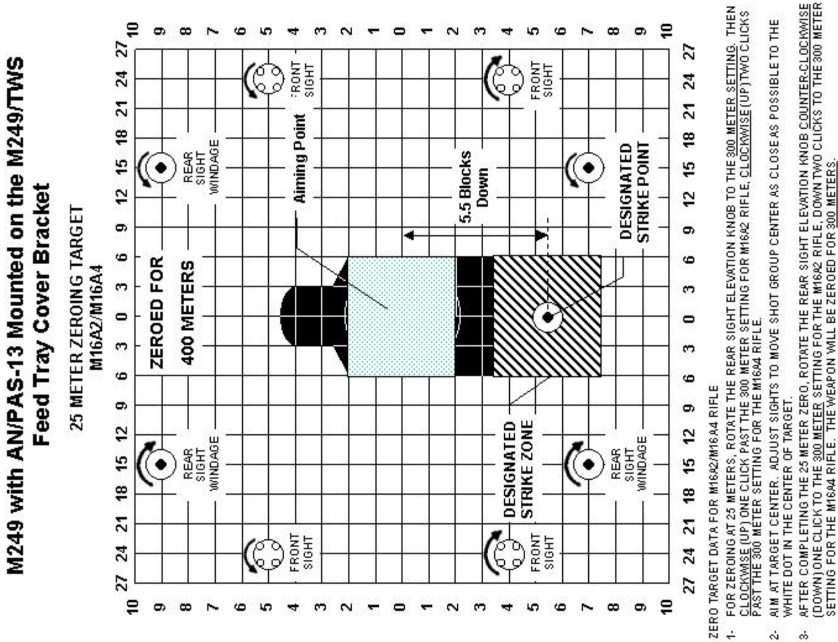


M249 – AN/PAS-13, TWS Mounting Instructions
(See Annex B for Target Prep Instructions)

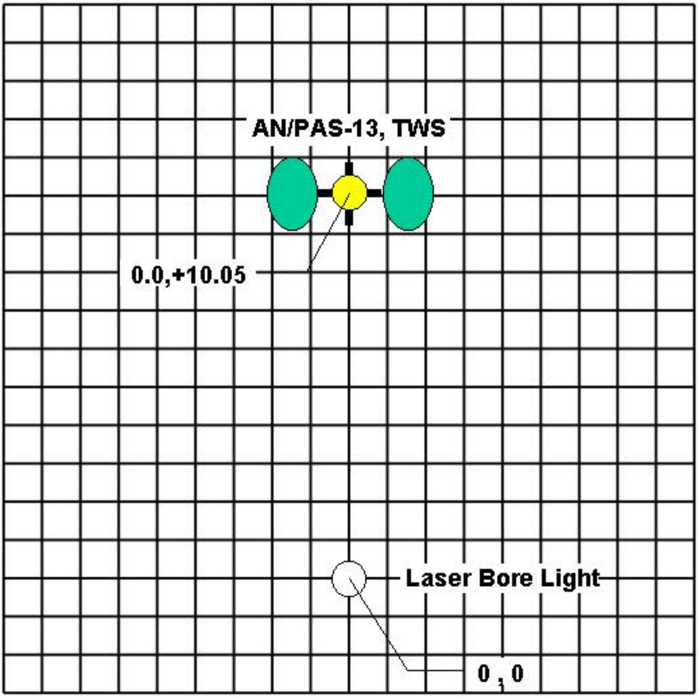
1. Install the TWS mounting bracket (1) per instructions contained in TM 11-5855-302-12&P
2. Install MTWS (2) on rail (3).
   a. Loosen knob (4) on mount (5).
   b. Select slot (6) on rail (3) for mounting. Any slot may be used as long as mount (5) does not hang over edge of rail.
   c. Place bar (7) of mount (5) in slot (6) of rail (3) and hand tighten knob (4) on mount until two clicks are heard.

NOTE: Rail grabber/mount (Item 5) is shown upside down in order to more clearly show the bar (item 7) which is to fit in the slot (item 6) on rail (item 3).

M249—AN/PAS-13 Zero and Boresight Targets, TWS Bracket



10 Meter Boresight Tgt-AN/PAS-13 Mtd on M249--
AN/PAS-13 Feed Tray Cover Bracket

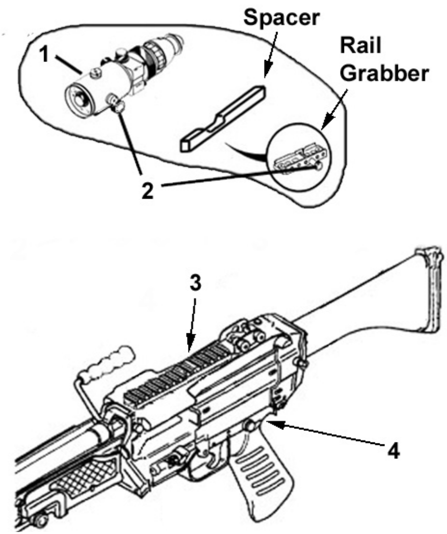


Zero Target Data for M249

1. Stabilize Weapon.
2. Place Thermal signature material or tips of fingers on gray circles.
3. Aim between gray circles at cross-hair.
4. Adjust AN/PAS-13 until the borelight laser is centered on its dot.
5. You MUST zero reticle in both wide and narrow field of view.

10 Meter Bore Sight Target for 400m Zero
(13 Dec 99)

Grids are 1cm wide by 1cm high. Units must locally manufacture.

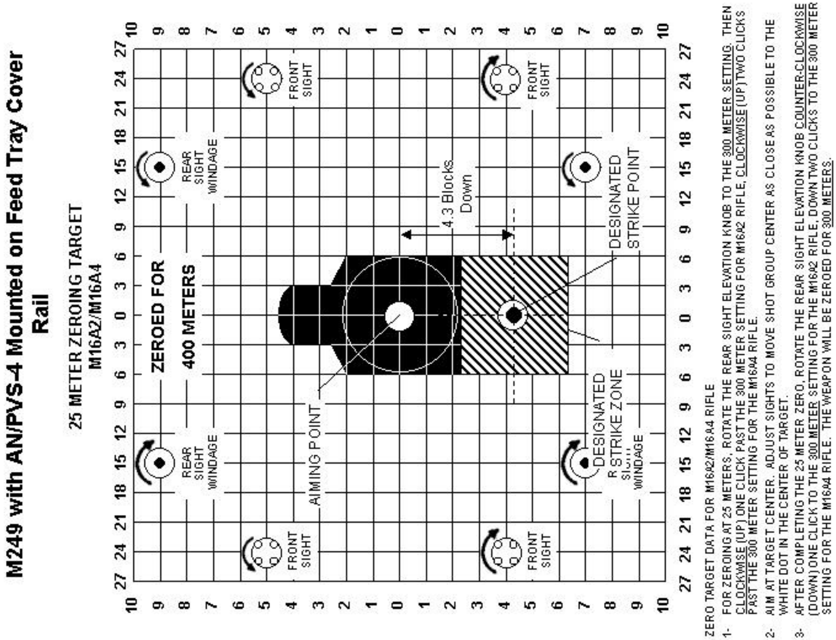


M249—AN/PVS-4 Mounting Instructions

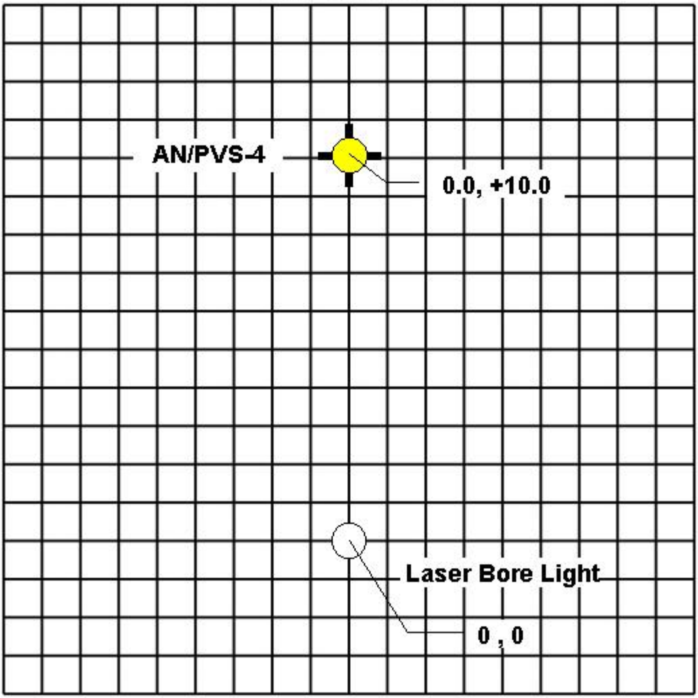
To properly mount the AN/PVS-4 (1) to the M249 (4) the unit Armorer must first install a spacer (NSN 5365-01-447-8991) and a rail grabber (NSN 5340-01-449-8533) on the AN/PVS-4.

1. Loosen the clamping knob (2) until sufficient space exists to place the clamping jaws on either side of the mounting rail (3). Tighten clamping knob (2) until two clicks are heard.
2. The AN/PVS-4 may be placed at position number 5 or back (counting from the back of the rail to the front) on the top feed tray cover rail, as long as the rail grabber does not extend beyond the rail. Installing forward of the number five slot the sight will interfere with the operators ability to raise the barrel handle, and the sight's objective lens will strike the weapon when the feed tray cover is opened.
3. If the AN/PVS-4 is removed from the rail the operator must take not of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.

M249—AN/PVS-4 Zero and Boresight Targets, Feed Tray Cover Rail



10m Boresight Tgt-AN/PVS-4 Mtd on M249 Feed Tray Cover Rail



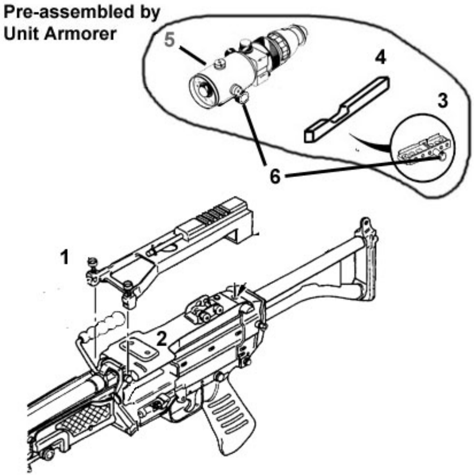
Zero Target Data for M249

10 Meter Bore Sight Target for 400m Zero

1. Stabilize Weapon.
2. Aim AN/PVS-4 at Cross Hair and adjust until the borelight strikes the Laser Borelight Dot.

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



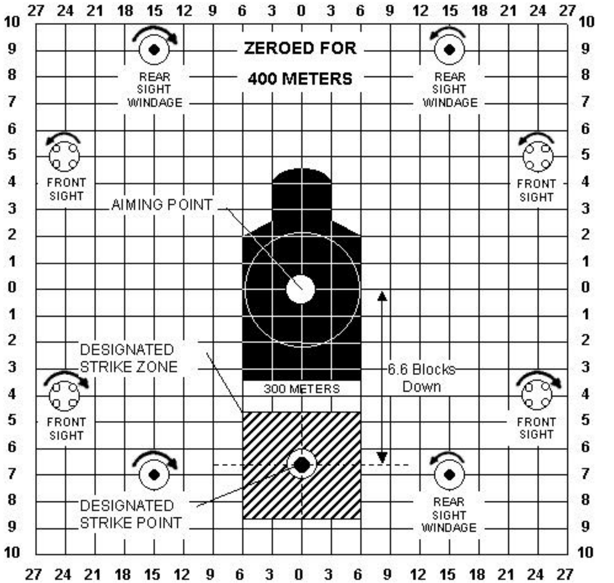
M249 – AN/PVS-4 Mounting Instructions Using AN/PAS-13, TWS Mounting Bracket

Install the TWS – M249 mounting bracket (1) to the M249 feed tray cover (2), per TM 11-5855-302-12&P

1. Attach the rail grabber/mount (3) and spacer (4) to the AN/PVS-4 (5). (Pre-assembled by unit armorer.) Rail Grabber is shown upside down to clearly show the rail grabber bar that fits in the rail slot.
2. Loosen knob (6) on rail grabber/mount until there is sufficient room between the jaws to seat the grabber on the rail.
3. Select slot on rail for mounting. Any slot may be used as long as the mount does not hang over the edge of the rail.
4. Place bar of rail grabber/mount (3) in slot of rail and hand tighten knob (6) on mount until two clicks are heard.
5. If the AN/PVS-4 is removed the operator must return the device to that same position in order to insure that zero is retained.

M249 with AN/PVS-4 Mounted with the M249-TWS Feed Tray Cover Bracket

25 METER ZEROING TARGET
M16A2/M16A4



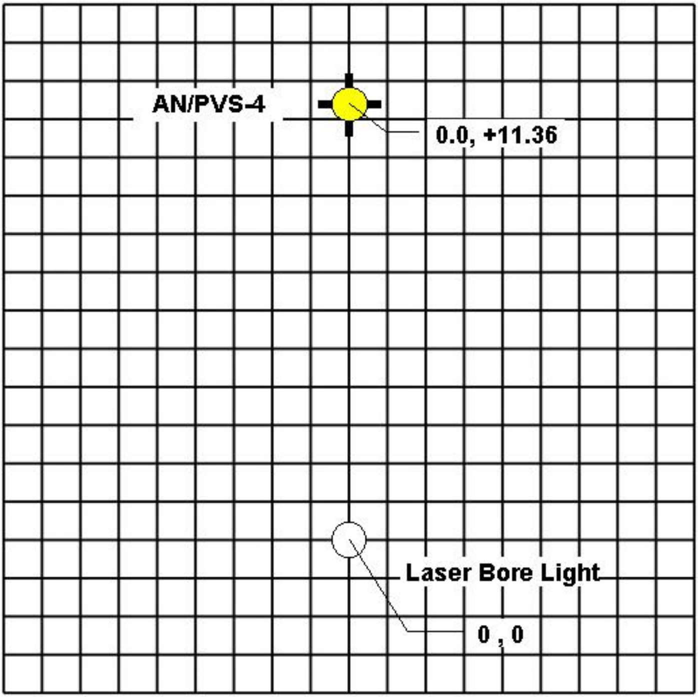
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PVS-4 Mtd on M249--
AN/PAS-13 Feed Tray Cover Bracket



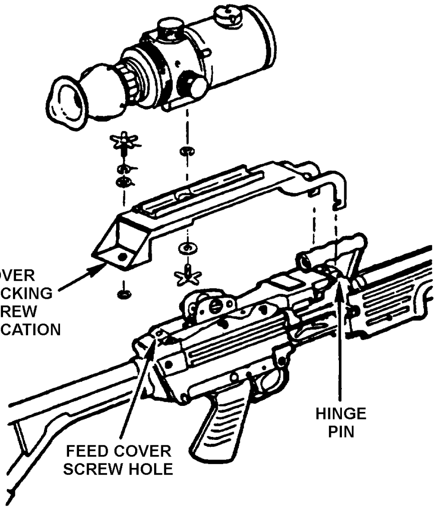
Zero Target Data for M249

1. Stabilize Weapon.
2. Aim AN/PVS-4 at Cross Hair and adjust until the borelight strikes the Laser Borelight Dot.

10 Meter Bore Sight Target for 400m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



M249 – AN/PVS-4 Mounting Instructions

The AN/PVS-4 may also be mounted on the M249 by using the AN/PVS-4—M249 Mounting Bracket (NSN 3040-01-233-0352). Using this method precludes the need to attach a spacer and a rail grabber to the AN/PVS-4.

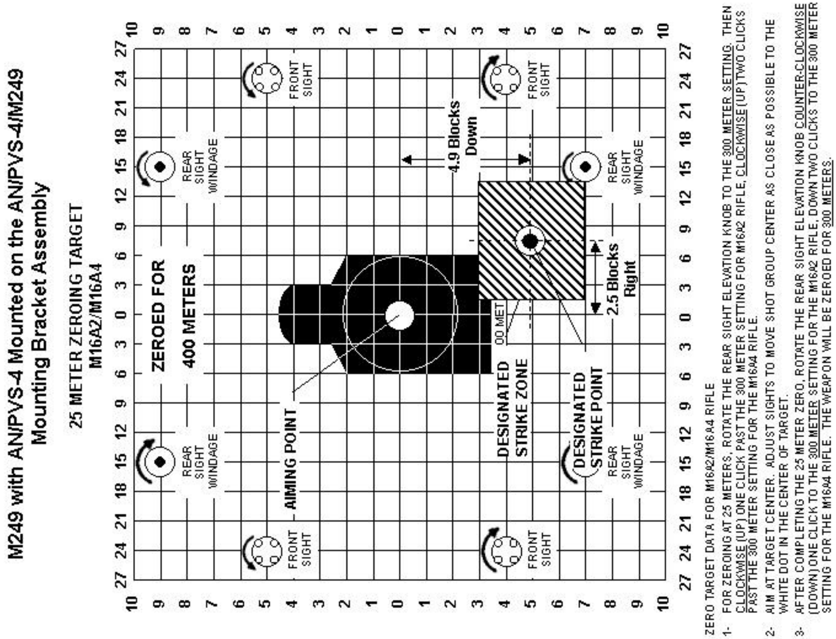
1. Hook the bracket feet around the feed cover pin and position the bracket on top of the weapon.

2. Turn bracket locking screw into the feed cover screw hole to secure bracket.

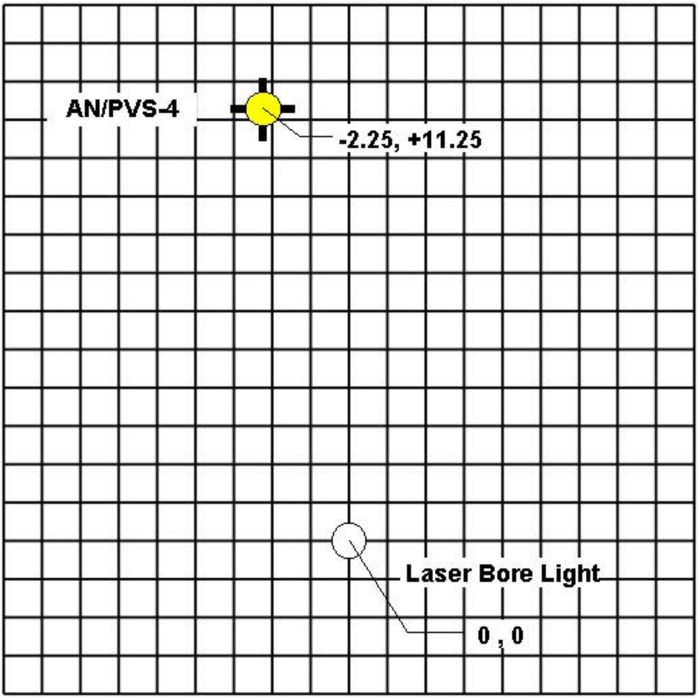
3. Place the sight on the bracket aligning the sight mounting bracket locking screw.

4. Tighten locking screw to secure night sight to bracket.

M249—AN/PVS-4 Zero and Boresight Targets, with AN/PVS-4 Bracket



10 Meter Boresight Tgt-AN/PVS-4 Mtd on M249--
AN/PVS-4 Feed Tray Cover Bracket

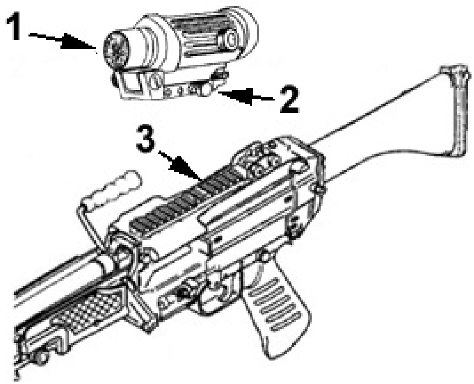


Zero Target Data for M249

1. Stabilize Weapon.
2. Aim AN/PVS-4 at Cross Hair and adjust until the borelight strikes the Laser Borelight Dot.

10 Meter Bore Sight Target for 400m Zero
(13 Dec 99)

Grids are 1cm wide by 1cm high. Units must locally manufacture.



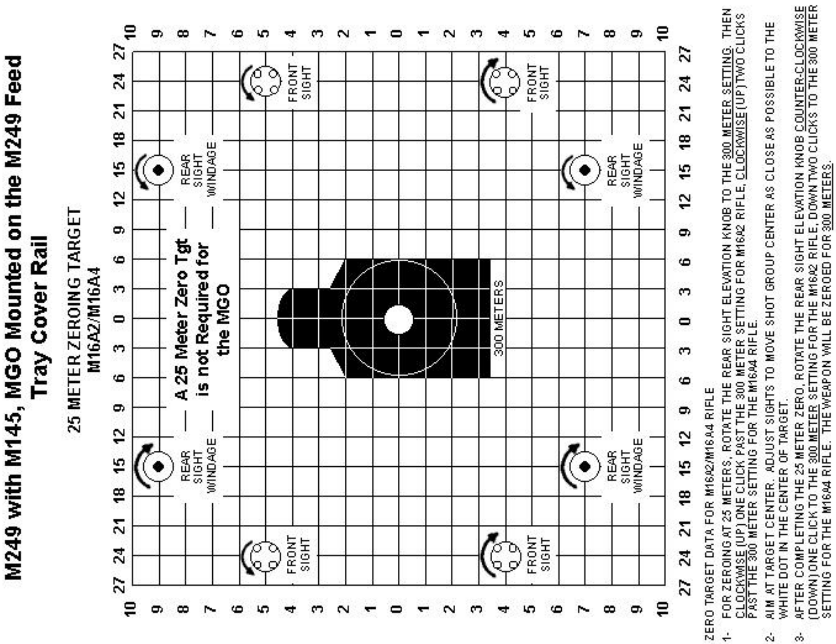
M249 – M145 MGO Mounting Instructions

The M145 MGO comes with an integrated rail grabber with torque limiting knob. This allows the MGO to be attached to the M249 with Integrated Feed Tray Cover Rail with a minimum of time and effort.

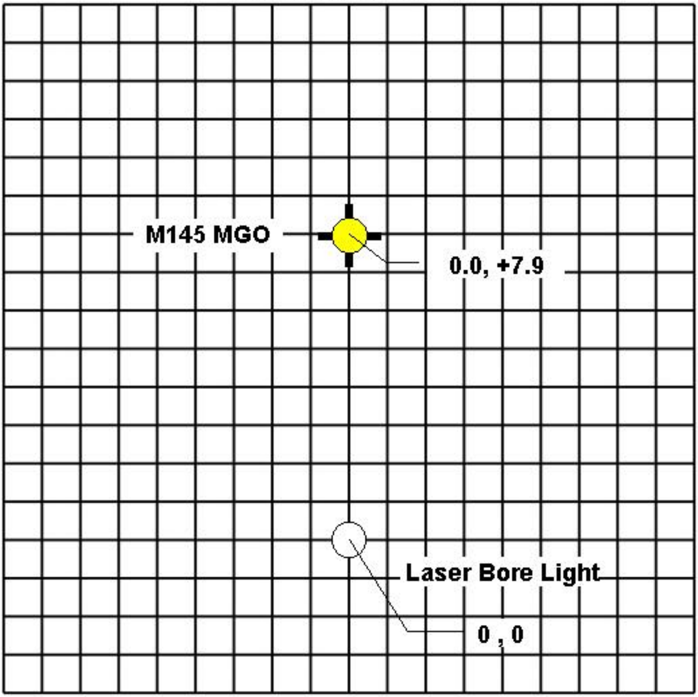
1. To install the MGO (1) loosen the clamping knob (2) until sufficient space exits to place the clamping jaws on either side of the mounting rail (3). Tighten clamping knob (2) until two clicks are heard.

2. Place the M145 approximately 70mm (2-3/4 inches in front of the firing eye. Ensure that the M145 is securely attached to the feed tray cover rail and begin eye relief adjustment, IAW TM 9-1240-415-13&P.

3. If the MGO is removed from the rail the operator must return the device to that same position in order to insure that zero is retained.


M249 with M145, MGO Mounted on the M249 Feed Tray Cover Rail
25 METER ZEROING TARGET
M16A2/M16A4
A 25 Meter Zero Tgt is not Required for the MGO
REAR SIGHT WINDAGE
FRONT SIGHT
300 METERS
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE
1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.
3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-M145 MGO Mtd on M249—Feed Tray Cover Rail



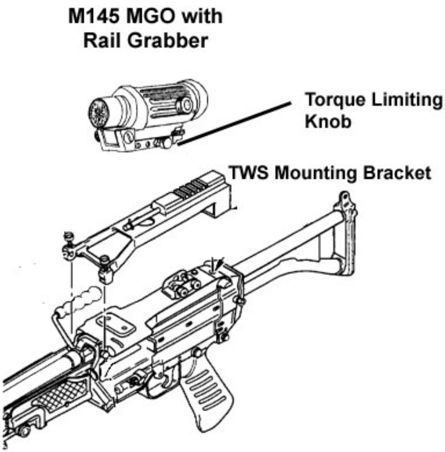
Zero Target Data for M249

10 Meter Bore Sight Target for 400m Zero

1. Stabilize Weapon.
2. Using the 10mZ reticle line, aim at the dot-cross hair.
3. Adjust the MGO until the laser borelight aligns on its dot.

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

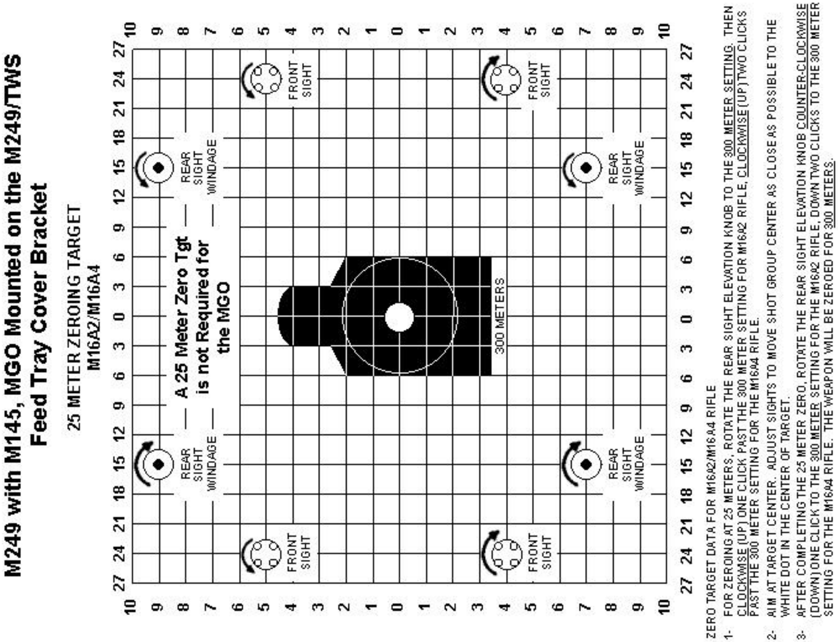


M249 – M145 MGO Mounting Instructions

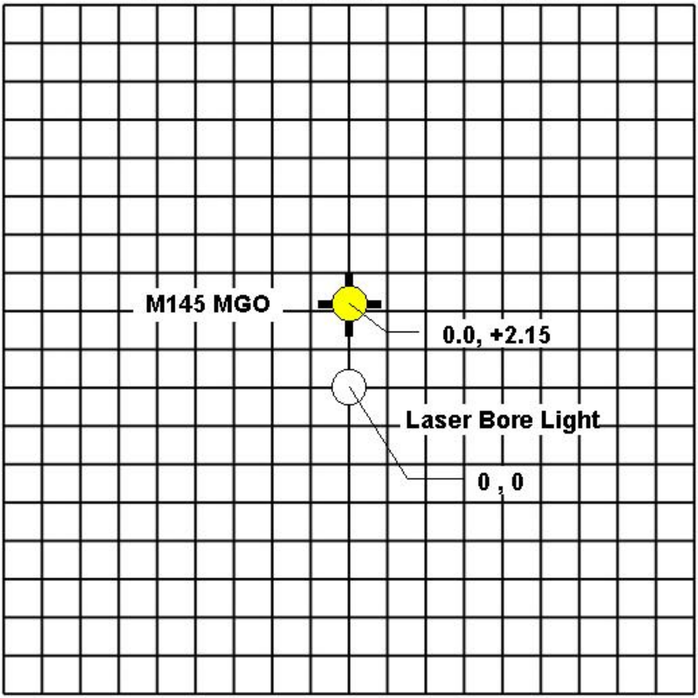
The M145 MGO can be mounted to the M249 using the TWS mounting bracket (Part No. A3170615) for the M249 MG.

1. Attach the TWS Mounting Bracket to the M249 MG IAW instructions contained in TM 11-5855-302-12&P.
2. Using the Torque Limiting Knob loosen the jaws on the rail grabber/mount until there is enough room to place the mount over the rail on the mounting bracket.
3. Place the M145 approximately 70mm (2-3/4 inches) in front of the firing eye. Tighten the Torque Limiting Knob on the rail grabber until two clicks are heard.
4. Ensure that the mount is securely fastened and begin eye relief adjustment, IAW TM 9-1240-415-13&P.

M249—MGO Zero and Boresight Targets



10 Meter Boresight Tgt-M145 MGO Mtd on M249--
AN/PAS-13 Feed Tray Cover Bracket



Zero Target Data for M249

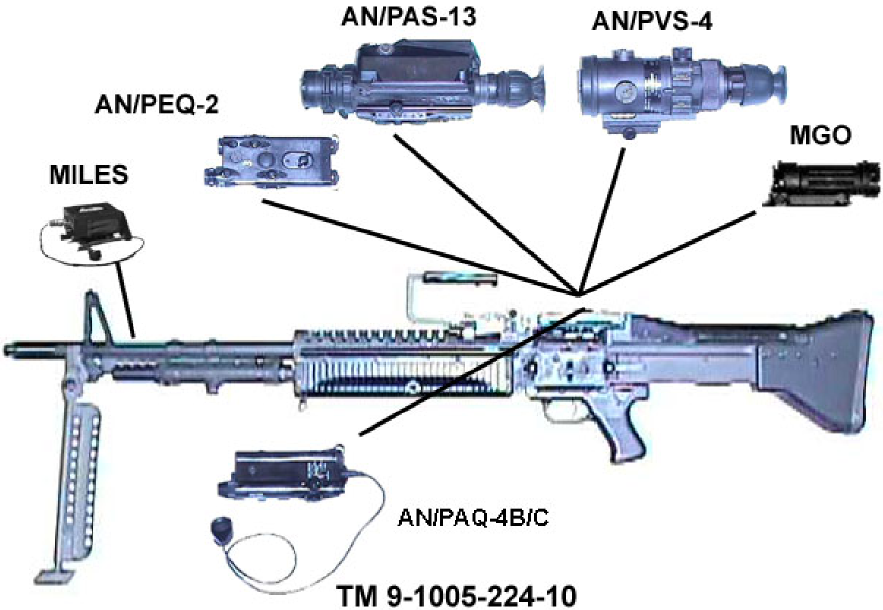
1. Stabilize Weapon.
2. Using the 10mZ reticle line, aim at the dot-cross hair.
3. Adjust the MGO until the laser borelight aligns on its dot.

10 Meter Bore Sight Target for 400m Zero
(13 Dec 99)

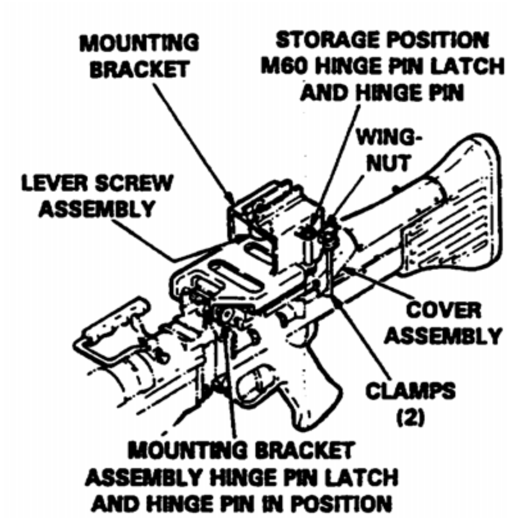
US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

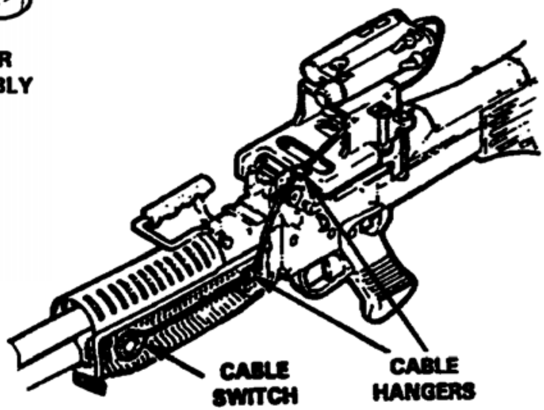
M60 Machine Gun System Diagram



1. Install Bracket



2. Install AN/PAQ-4B/C



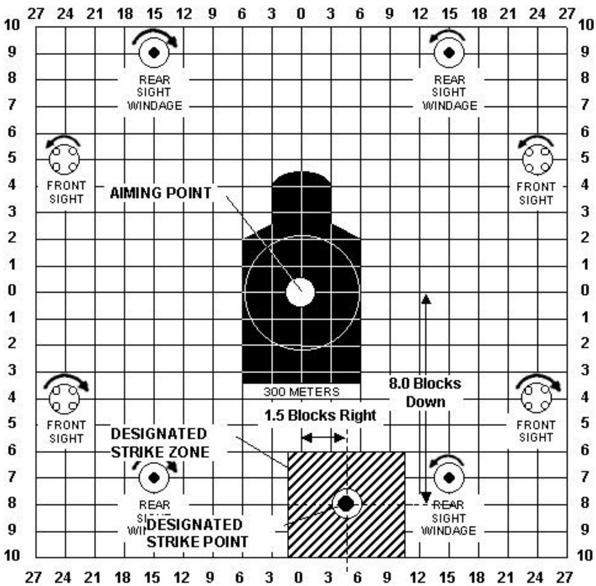
M60 – AN/PAQ-4B/C Mounting Instructions

The AN/PAQ-4B/C mounts on the M60 Machine Gun using the M60 Mounting Bracket (NSN: 5855-01-046-7272) and the Bracket Adapter (NSN: 5340-01-362-9873) IAW TM 11-5855-308-12&P-DRAFT.

1. Remove the M60 hinge pin latch and hinge pin from the cover assembly. Place the pin latch in the aiming guides on the left side of the Mounting Bracket and press together (see Figure).
2. Place the Mounting Bracket on top of the machine gun cover so that the holes in the front of the bracket align with the cover assembly pin holes.
3. Insert the longer hinge pin supplied with the bracket through the bracket and cover assembly and secure by inserting the hinge pin latch.
4. Turning counter clockwise loosen the wing nuts on both leg clamps and position the leg clamps under the cover assembly. Secure the Mounting Bracket by tightening the wing nuts firmly. The split washer should be next to the wing nut and the flat washer next to the bracket.
5. Place the Bracket Adapter in the AN/PAQ-4B/C mounting groove flush with the front of the AN/PAQ-4B/C. Tighten the thumbscrew clockwise.
6. Position the AN/PAQ-4B/C with Bracket Adapter onto the M60 Mounting Bracket mounting groove. Align the front edge of the Bracket Adapter and front edge of the groove. Tighten the lever screw assembly.

M60 with AN/PAQ-4B/C Mounted on the M60-AN/PVS-4 Feed Tray Cover Bracket

25 METER ZEROING TARGET
M16A2/M16A4



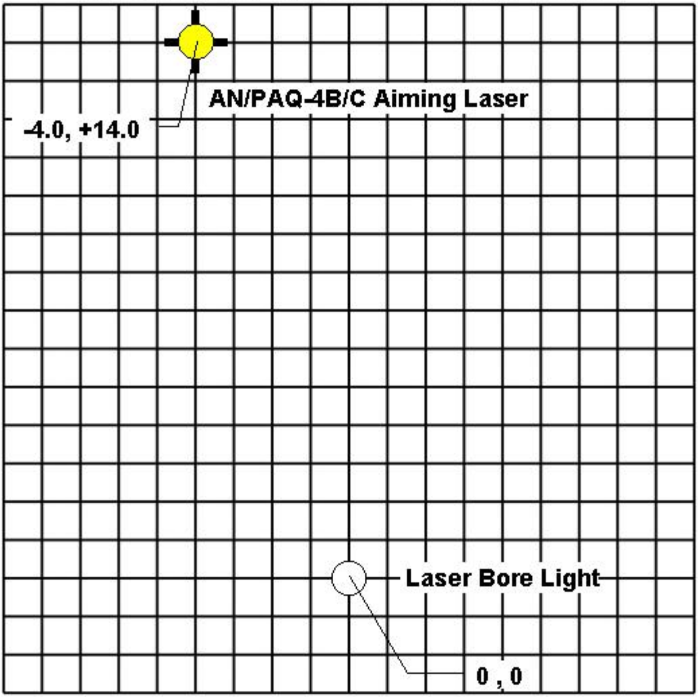
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PAQ-4B/C Mtd on M60
Using the M60—AN/PVS-4 Mounting Bracket

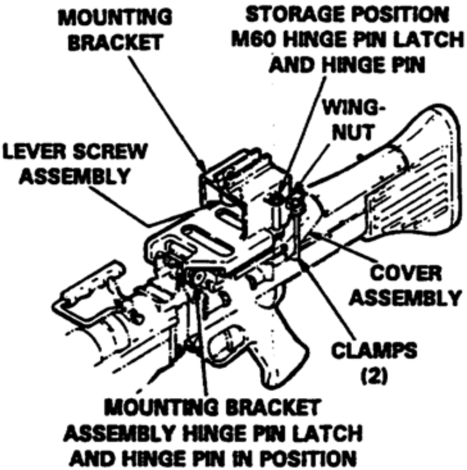


Zero Target Data for M60 MG

1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

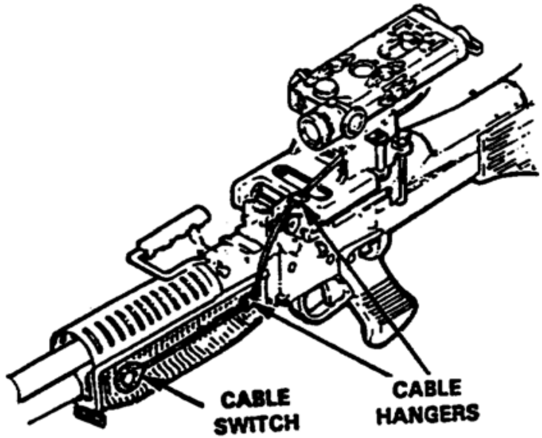
10 Meter Bore Sight Target for 500m Zero

Grids are 1cm wide by 1cm high. Units must locally manufacture.



1. Install Bracket

2. Install AN/PEQ-2A



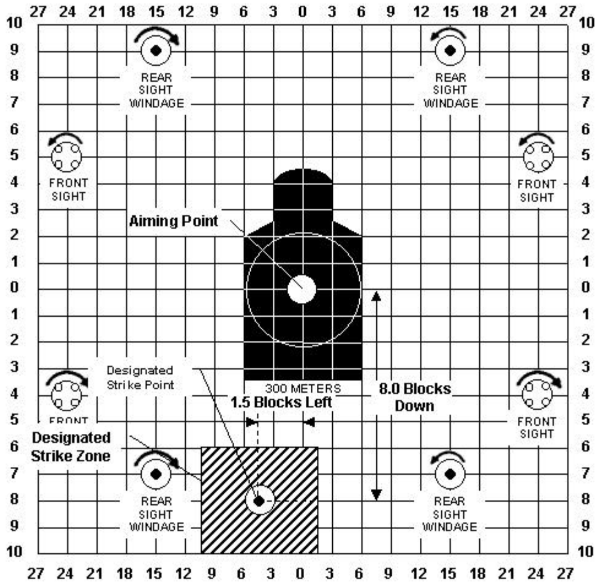
M60 – AN/PEQ-2A Mounting Instructions

The AN/PEQ-2A mounts on the M60 Machine Gun using the M60 Mounting Bracket (NSN: 5855-01-046-7272) and the Bracket Adapter (NSN: 5340-01-362-9873) IAW TM 11-5855-308-12&P-DRAFT.

1. Remove the M60 hinge pin latch and hinge pin from the cover assembly. Place the pin latch in the aiming guides on the left side of the Mounting Bracket and press together (see Figure).
2. Place the Mounting Bracket on top of the machine gun cover so that the holes in the front of the bracket align with the cover assembly pin holes.
3. Insert the longer hinge pin supplied with the bracket through the bracket and cover assembly and secure by inserting the hinge pin latch.
4. Turning counter clockwise loosen the wing nuts on both leg clamps and position the leg clamps under the cover assembly. Secure the Mounting Bracket by tightening the wing nuts firmly. The split washer should be next to the wing nut and the flat washer next to the bracket.
5. Place the Bracket Adapter in the AN/PEQ-2A mounting groove flush with the front of the AN/PEQ-2A. Tighten the thumbscrew clockwise.
6. Position the AN/PEQ-2A with Bracket Adapter onto the M60 Mounting Bracket mounting groove. Align the front edge of the Bracket Adapter and front edge of the groove. Tighten the lever screw assembly.

M60 with AN/PEQ-2A Mounted on Feed Tray Cover with M60—AN/PVS-4 Mounting Bracket

25 METER ZEROING TARGET
M16A2/M16A4



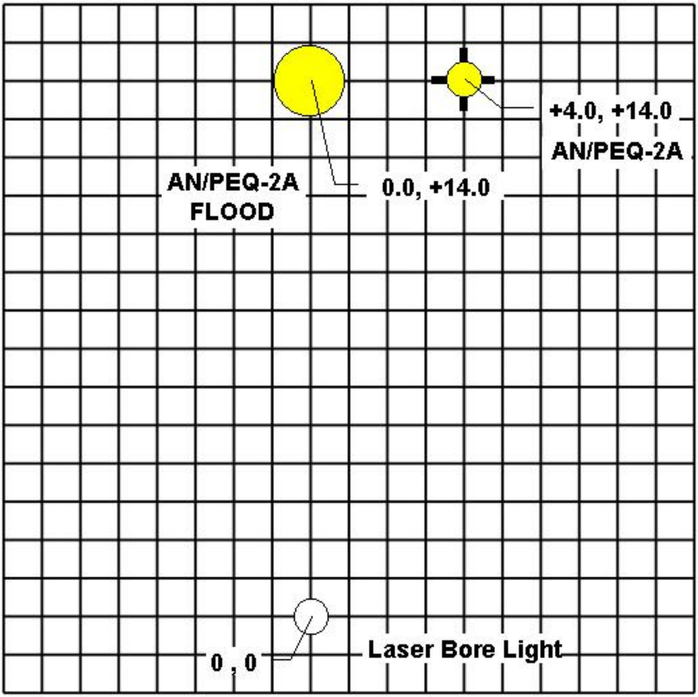
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PEQ-2A Mtd on M60
Using the M60—AN/PVS-4 Mounting Bracket

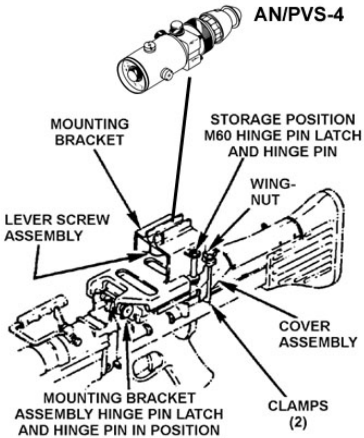


Zero Target Data for M60 MG

1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

10 Meter Bore Sight Target for 500m Zero

Grids are 1cm wide by 1cm high. Units must locally manufacture.

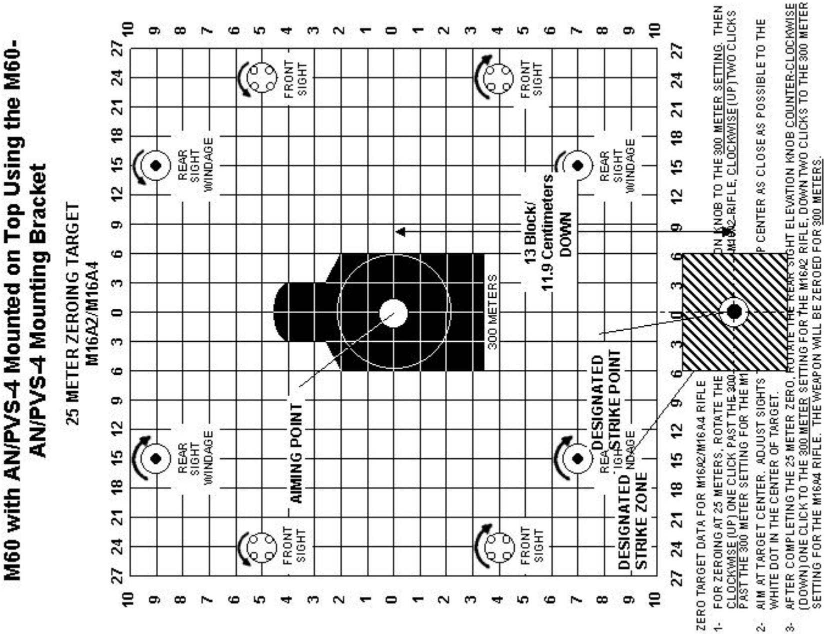


M60 – AN/PVS-4 Mounting Instructions

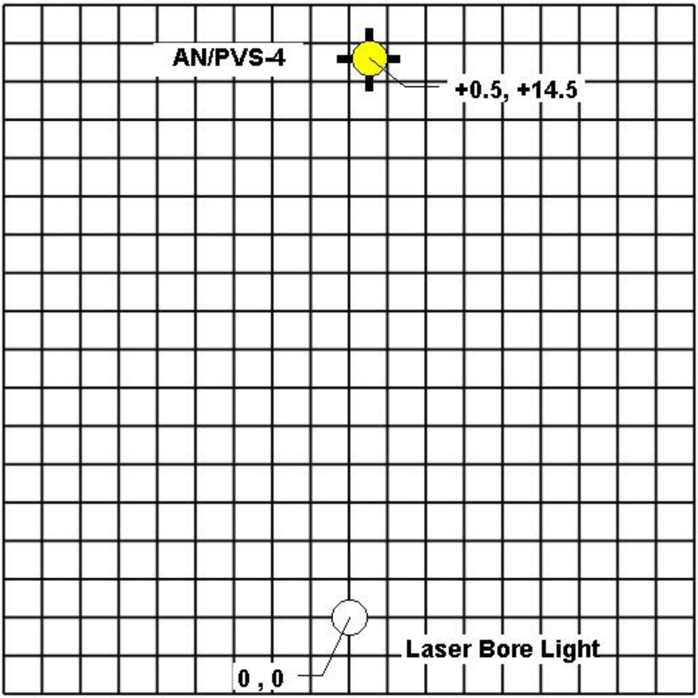
The AN/PVS-4 mounts on the M60 Machine Gun using the M60 Mounting Bracket (NSN: 5855-01-046-7272).

1. Pull the M60 bolt to the rear and put the weapon on SAFE.
2. Raise the M60 feed cover and remove the hinge pin from the cover assembly by removing the latch inside the hinge pin first. Place the hinge pin in the storage position on the left side of the mounting bracket then insert the latch into the hinge pin to secure.
3. Position the mounting bracket assembly on top of the feed cover so that the holes in the front of the bracket align with cover assembly hinge pin holes.
4. Insert the longer hinge pin supplied with the bracket from the right side through the bracket and cover assembly and secure by inserting the hinge pin latch into the left side of the pin.
5. Loosen the wingnuts on both leg clamps and position the clamp under the cover assembly. Secure the mounting bracket by tightening the wingnuts firmly. Close feed cover.
6. Mount the sight to the bracket by aligning the scribe line on the sight and the bracket. Tighten the screw to secure the sight to the bracket.

M60—AN/PVS-4 Zero and Boresight Targets



10 Meter Boresight Tgt-AN/PVS-4 Mtd on M60
Using the M60—AN/PVS-4 Mounting Bracket

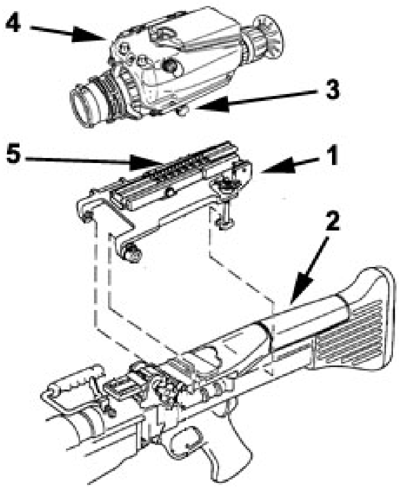


Zero Target Data for M60 MG

1. Stabilize Weapon.
2. Aim AN/PVS-4 at Cross Hair and adjust until the borelight strikes the Laser Borelight Dot.

10 Meter Bore Sight Target for 400m Zero

Grids are 1cm wide by 1cm high. Units must locally manufacture.



M60 – AN/PAS-13, TWS Mounting Instructions
(See Annex B for Target Prep Instructions)

The AN/PAS-13, TWS, is mounted by installing the AN/PAS-13's M60 Mounting Bracket (P/N 80063A3170620) IAQ TM 11-5855-302-12&P.

1. Install the AN/PAS-13's M60 Mounting Bracket (1) on the M60 Machine Gun (2) IAW instructions contained in TM 11-5855.302-12 &P.
2. Loosen the clamping knob (3) on the AN/PAS-13 (4) until there is sufficient space between the jaws of the rail grabber to fit on either side of the rail.
3. Select a slot on the rail (5) that provides a convenient location for the AN/PAS-13 to be mounted (i.e. allows the operator to access the controls and to view the target through the eye cup.

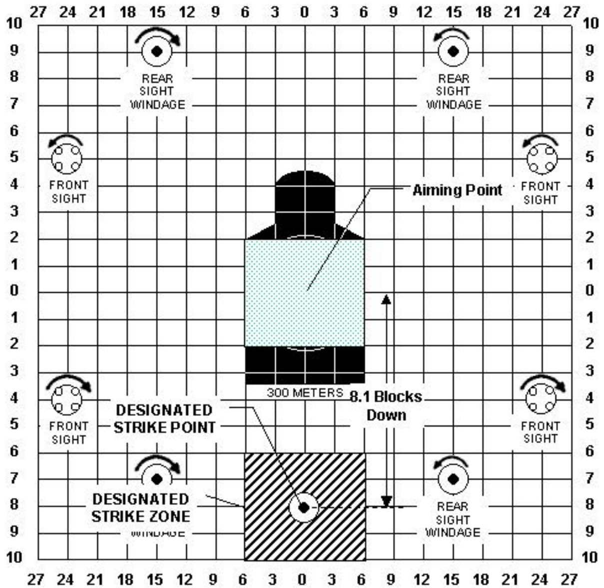
CAUTION

Insure the AN/PAS-13 lens does not strike the weapon when the feed tray cover is opened.

4. Tighten the torque limiting clamping knob (3) until two clicks are heard.
5. If the operator must remove the sight from the rail he must insure that he returns the device to the same rail slot in order to retain zero.

M60 with AN/PAS-13 Mounted on the M60/TWS Feed Tray Cover Bracket

25 METER ZEROING TARGET
M16A2/M16A4



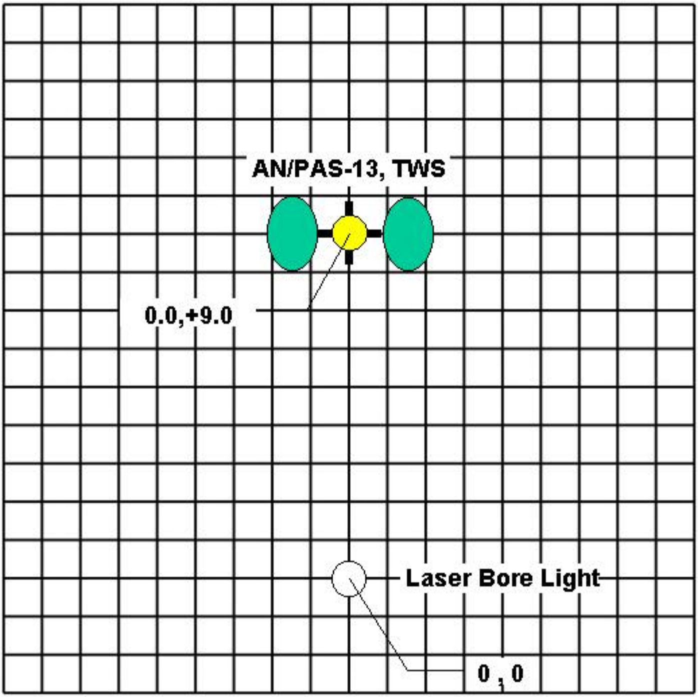
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PAS-13 Mtd on M60
Using the M60—TWS Mounting Bracket

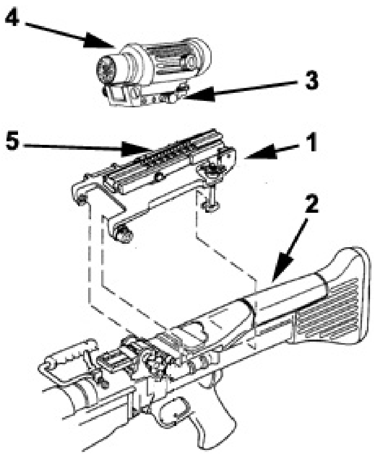


Zero Target Data for M60 MG

10 Meter Bore Sight Target for 500m Zero

1. Stabilize Weapon.
2. Place Thermal signature material or tips of fingers on gray circles.
3. Aim between gray circles at cross-hair.
4. Adjust AN/PAS-13 until the borelight laser is centered on its dot.
5. You MUST zero reticle in both wide and narrow field of view.

Grids are 1cm wide by 1cm high. Units must locally manufacture.



M60 – M145, MGO Mounting Instructions

The M145, MGO, is mounted by installing the AN/PAS-13's M60 Mounting Bracket (P/N 80063A3170620). See TM 11-5855-302-12&P for detailed installation instructions.

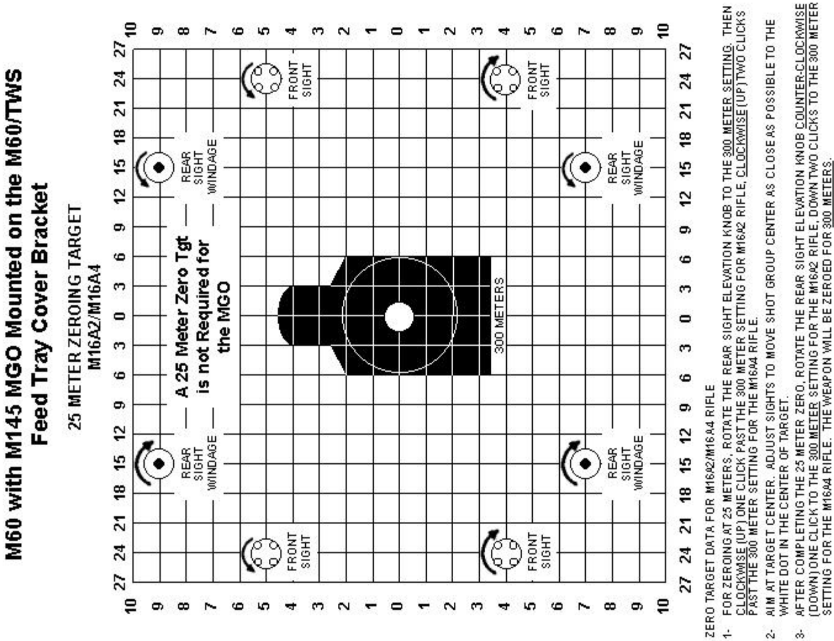
1. Install the AN/PAS-13's M60 Mounting Bracket (1) on the M60 Machine Gun (2) IAW instructions contained in TM 11-5855.302-12 &P.
2. Loosen the clamping knob (3) on the M145, MGO (4) until there is sufficient space between the jaws of the rail grabber to fit on either side of the rail.
3. Place the M145 approximately 70mm (2-3/4 inches) in front of the firing eye. Tighten the Torque Limitiing Knob on the rail grabber until two clicks are heard.
4. Ensure the mount is fastened, begin eye relief adjustment, IAW TM 9-1240-415-13&P.

CAUTION

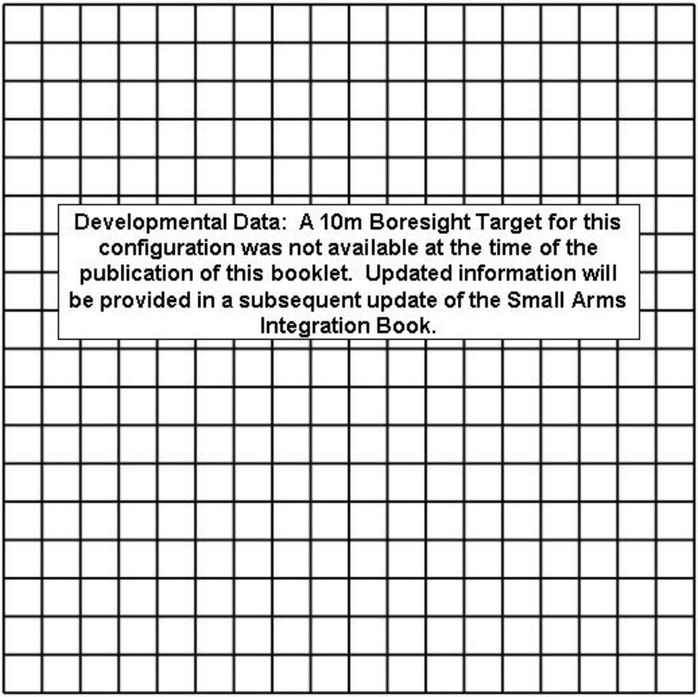
Insure that the objective lens of the M145 does not strike the weapon when the feed tray cover is raised.

5. If the operator must remove the sight from the rail he must take note of the slot and insure that he return the device to the same rail slot in order to retain zero.

M60—M145 MGO Zero and Boresight Targets

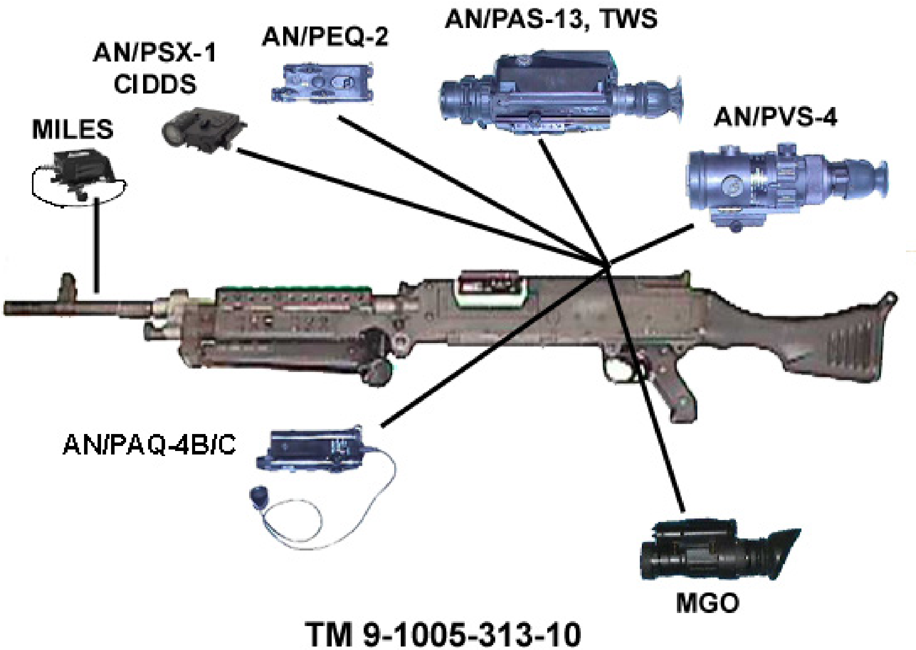


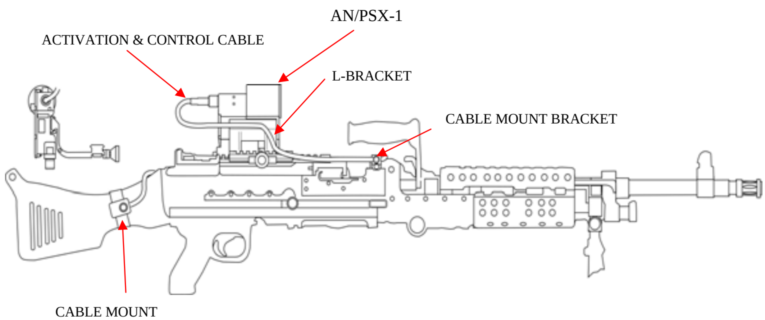
10 Meter Boresight Tgt-M145 MGO Mtd on M60 Using the M60—TWS Mounting Bracket

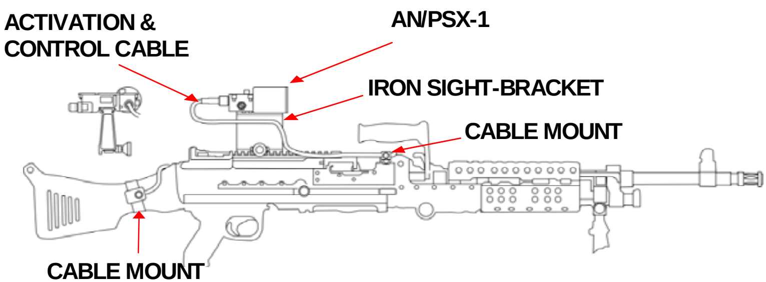


Grids are 1cm wide by 1cm high. Units must locally manufacture.

M240B Machine Gun System Diagram




AN/PSX-1
ACTIVATION & CONTROL CABLE
L-BRACKET
CABLE MOUNT BRACKET
CABLE MOUNT


ACTIVATION & CONTROL CABLE
AN/PSX-1
IRON SIGHT-BRACKET
CABLE MOUNT
CABLE MOUNT

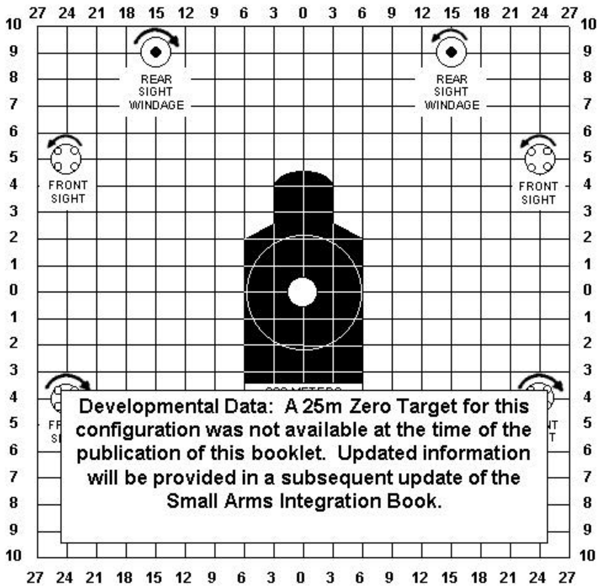
M240B - AN/PSX-1 Interrogator Set Mounting Instructions

The AN/PSX-1 Interrogator Set is mounted on the top cover rail using either the L-Bracket (Part No 6451507), when CIDDS is used with an auxiliary sight, or the Iron Sight Bracket (Part No. 6451508), when CIDDS is used with open sights.

1. Attach L-Bracket (Part No. 6451507) or Iron Sight Bracket (Part No.6451508) on top of the top cover rail of the M 240B.
2. Secure the AN/PSX-1 to the rail with the rail grabber-clamping knob. On the L-Bracket, the AN/PSX-1 is installed vertically, on the Iron Sight Bracket, the AN/PSX-1 is installed horizontally.
3. Using CIDDS cable mount assembly (Part No. 6451532) attach cable to back of AN/PSX-1, the forward cable bracket next to the carrying handle, and the rear cable bracket with velcro straps to the butt stock.

M240B with AN/PSX-1 Mounted on Top of Feed Tray Cover Rail with CIDDS "L" Bracket

25 METER ZEROING TARGET
M16A2/M16A4



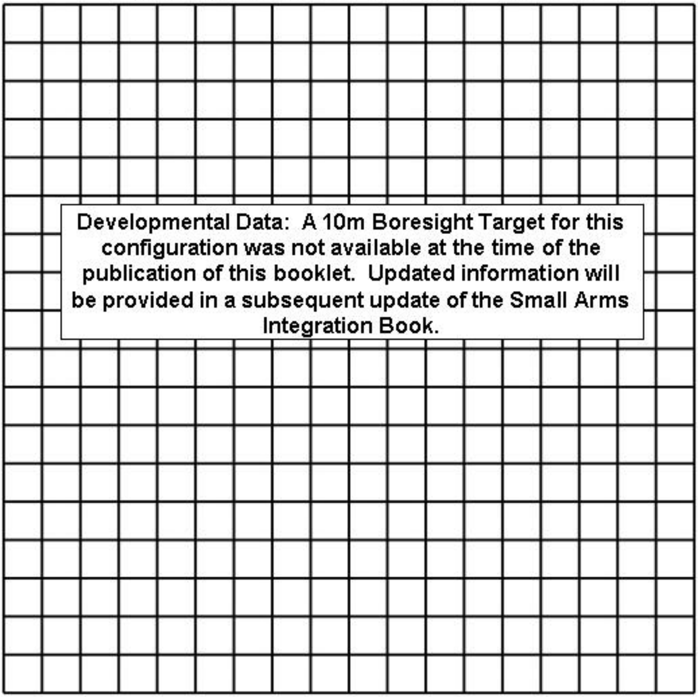
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PSX-1 Mtd on M240B Feed Tray Cover Rail CIDDS "L" Bracket

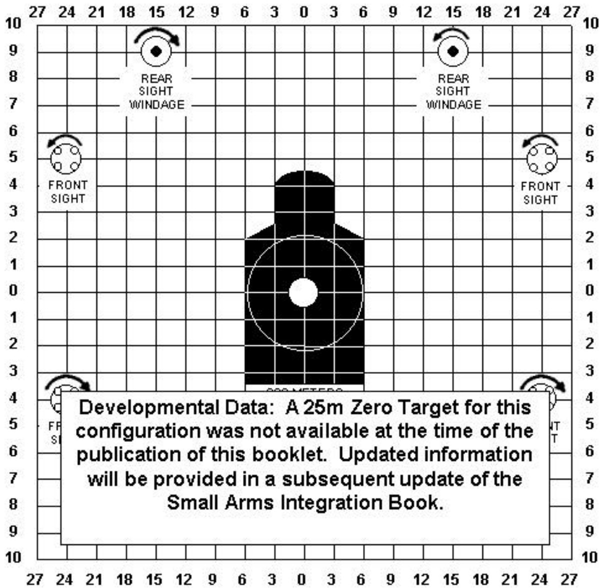


Developmental Data: A 10m Boresight Target for this configuration was not available at the time of the publication of this booklet. Updated information will be provided in a subsequent update of the Small Arms Integration Book.

Grids are 1cm wide by 1cm high. Units must locally manufacture.

M240B with AN/PSX-1 Mounted on Top of Feed Tray Cover Rail with CIDDS "Iron Sight" Bracket

25 METER ZEROING TARGET
M16A2/M16A4



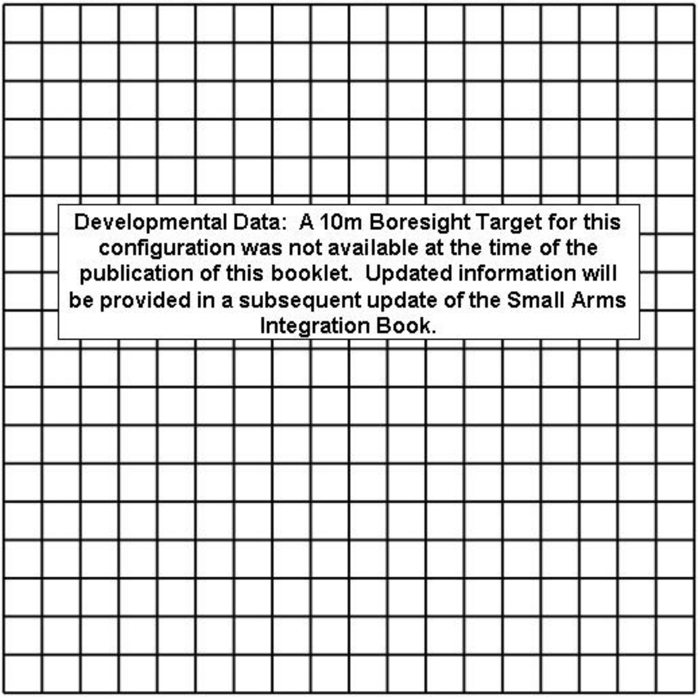
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PSX-1 Mtd on M240B
Feed Tray Cover Rail CIDDS "Open Sight" Bracket



Grids are 1cm wide by 1cm high. Units must locally manufacture.

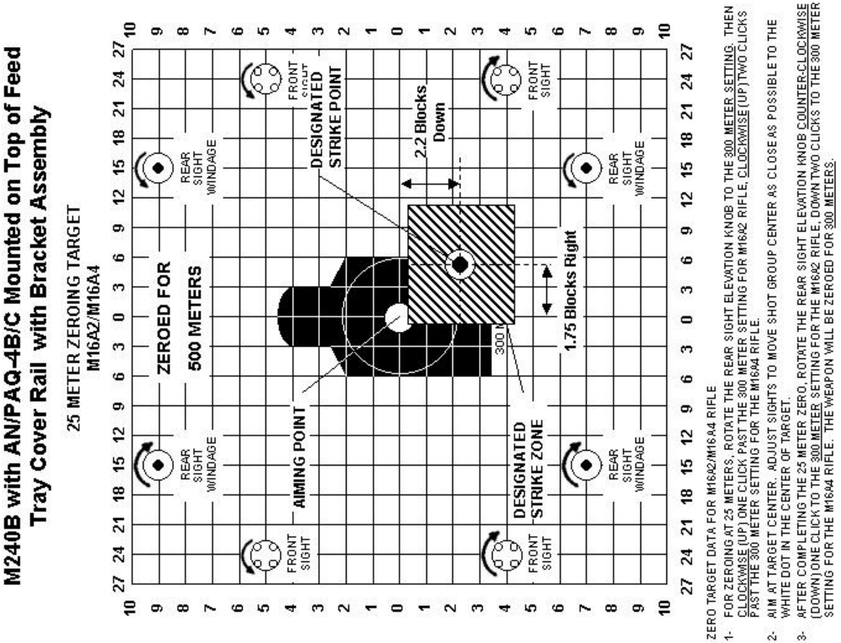


M240B – AN/PAQ-4B/C Mounting Instructions

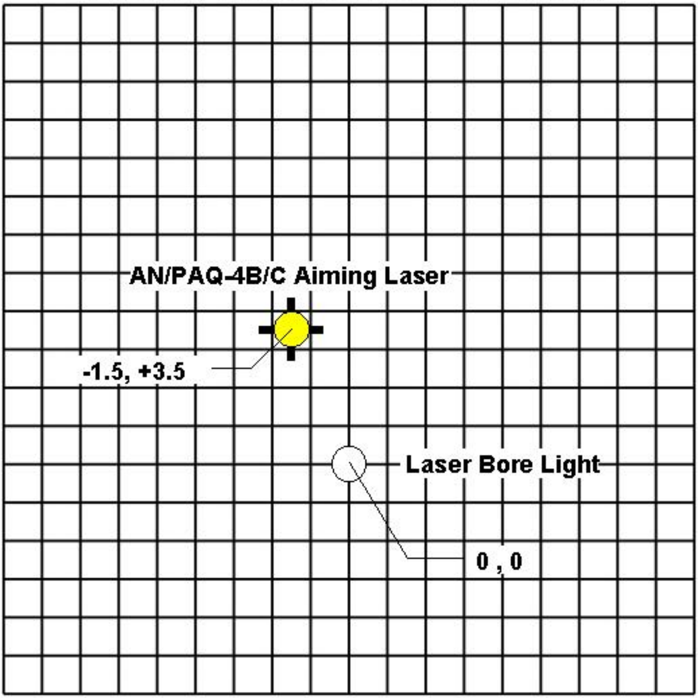
The AN/PAQ-4B/C (1) is mounted on the top cover rail (2) (see arrow) using the AN/PAQ-4B/C Bracket Assembly) (NSN 5340-01-390-3812).

1. Mount the bracket assembly to the AN/PAQ-4B/C (1) using the thumbscrew on the AN/PAQ-4B/C.
2. Loosen the clamping knob (3) until the rail grabber/mount has sufficient space to fit over the top cover rail (2). Tighten the clamping knob until two clicks are heard.
3. The AN/PAQ-4B/C may be placed at whichever position on the rail is most convenient for the operator. If however the AN/PAQ-4B/C is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.
4. Install the remote switch (4) in a convenient location using the provided cable hangers.

M240B—AN/PAQ-4B/C Zero and Boresight Targets



10 Meter Boresight Tgt-AN/PAQ-4B/C Mtd on M240B Feed Tray Cover Rail with Bracket Assembly

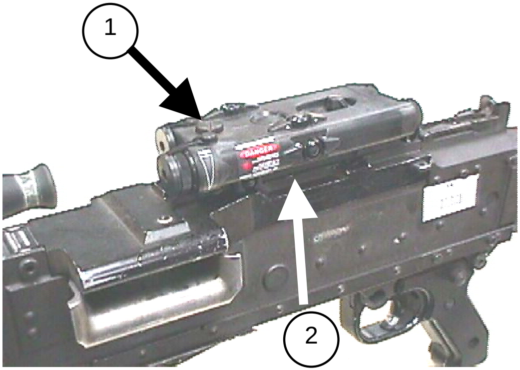


Zero Target Data for M240B

1. Stabilize Weapon.
2. Align Laser Borelight on its dot (See Annex F)
3. Adjust AN/PAQ-4B/C until aiming laser is centered on the dot-cross hair.

10 Meter Bore Sight Target for 500m Zero
(13 Dec 99)

Grids are 1cm wide by 1cm high. Units must locally manufacture.



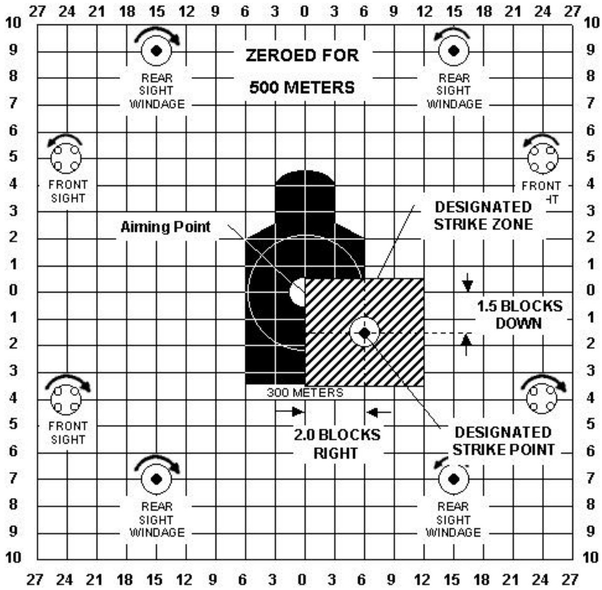
M240B – AN/PEQ-2A Mounting Instructions

The AN/PEQ-2A (1) is mounted on the top cover rail (2) (see arrow) using the AN/PAQ-4B/C Bracket Assembly (NSN 5340-01-390-3812)

1. Mount the bracket assembly to the AN/PEQ-2A (1) using the thumbscrew on the AN/PEQ-2A.
2. Loosen the clamping knob (on reverse side of AN/PEQ-2A) until the rail grabber/mount has sufficient space to fit over the top cover rail (2). Tighten the clamping knob until two clicks are heard.
3. The AN/PEQ-2A may be placed at whichever position on the rail is most convenient for the operator. If however the AN/PEQ-2A is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.
4. Install the remote switch (not shown) in a convenient location using the provided cable hangers.

M240B with AN/PEQ-2A Mounted on Top Feed Tray Cover Rail with Bracket Assembly

25 METER ZEROING TARGET
M16A2/M16A4



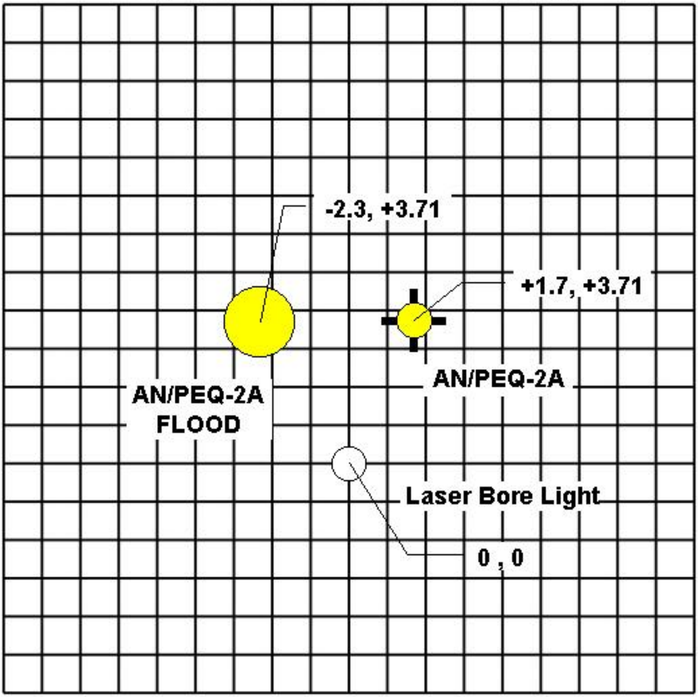
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PEQ-2A Mtd on M240B Feed Tray Cover Rail with Bracket Assembly



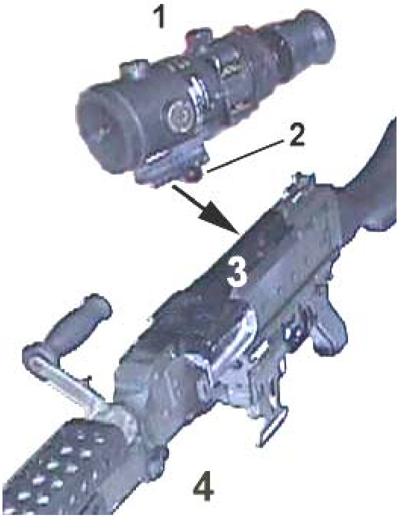
Zero Target Data for M240B

1. Stabilize Weapon.
2. Align Laser Borelight on it's dot.
3. Adjust AN/PEQ-2A until aiming laser is centered on the dot cross hair.

10 Meter Bore Sight Target for 500m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

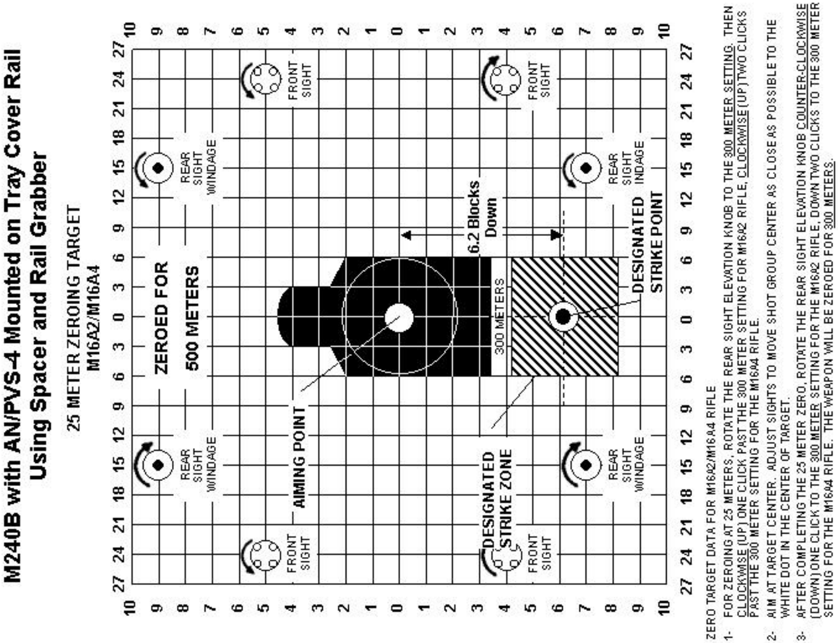


M240B – AN/PVS-4 Mounting Instructions

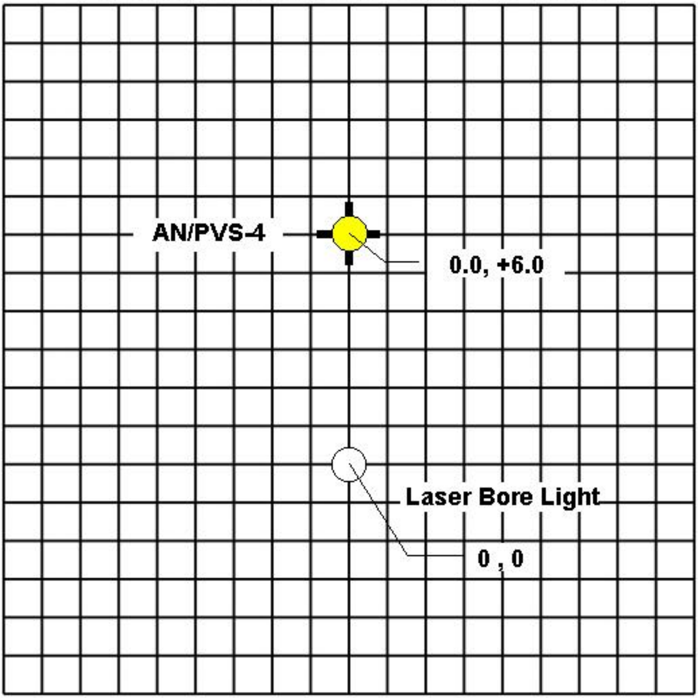
In order to properly mount the AN/PVS-4 (1) to the M240B (4) the unit Armorer must first install a spacer (NSN 5365-01-447-8991) and a rail grabber/mount (NSN 5340-01-449-8533) on the AN/PVS-4.

1. Loosen the clamping knob (2) until sufficient space exits to place the clamping jaws on either side of the mounting rail (3). Tighten clamping knob (2) until two clicks are heard.
2. The AN/PVS-4 may be placed at position 5 or back (counting from the back of the rail to the front) on the top feed tray cover rail, as long as the rail grabber/mount does not extend beyond the rail. Should the device be installed forward of the number five slot the sight will interfere with the operators ability to raise the barrel handle, and the sights objective lens will strike the weapon when the feed tray cover is opened.
3. If the AN/PVS-4 is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.

M240B—AN/PVS-4 Zero and Boresight Targets



10 Meter Boresight Tgt-AN/PVS-4 Mtd on M240B Feed Tray Cover Rail with Spacer and Grabber

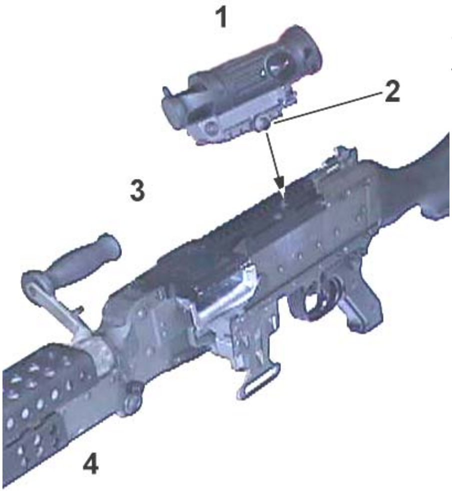


Zero Target Data for M240B

1. Stabilize Weapon.
2. Aim AN/PVS-4 at Cross Hair and adjust until the borelight strikes the Laser Borelight Dot.

10 Meter Bore Sight Target for 500m Zero
(13 Dec 99)

Grids are 1cm wide by 1cm high. Units must locally manufacture.



M240B – M145 MGO Mounting Instructions

The M145 MGO comes with an integrated rail grabber with torque limiting knob. This allows the MGO to be attached to the M240B with Integrated Feed Tray Cover Rail with a minimum of time and effort.

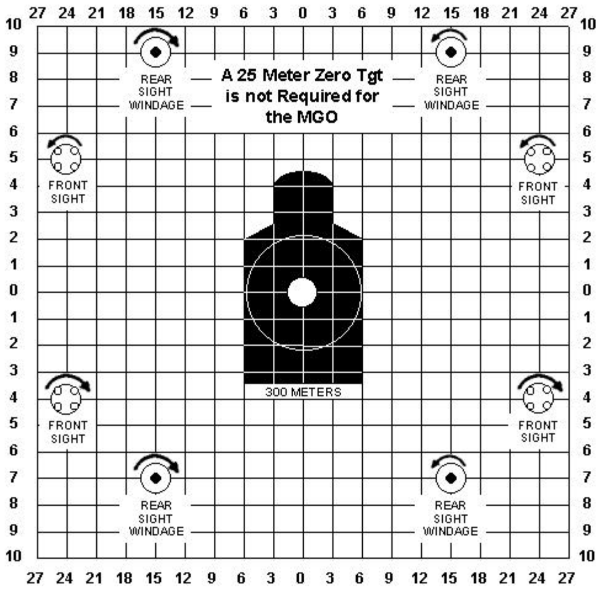
1. In order to install the MGO (1) loosen the clamping knob (2) until sufficient space exits to place the clamping jaws on either side of the mounting rail (3). Tighten clamping knob (2) until two clicks are heard.

2. Place the M145 approximately 70mm (2-3/4 inches in front of the firing eye. Ensure that the M145 is securely attached to the feed tray cover rail and begin eye relief adjustment, IAW TM 9-1240-415-13&P.

3. If the MGO is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.

M240B with M145, MGO Mounted on Tray Cover Rail

25 METER ZEROING TARGET
M16A2/M16A4



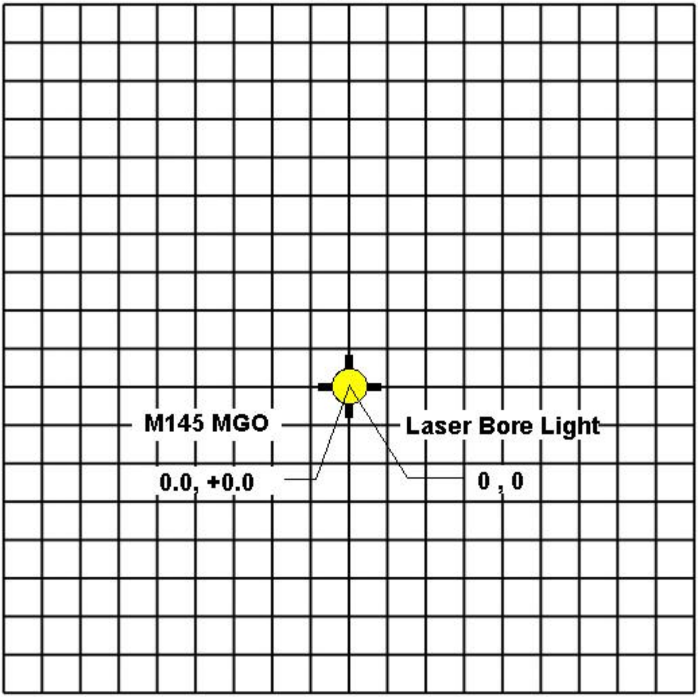
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-M145 Mtd on M240B Feed Tray Cover Rail



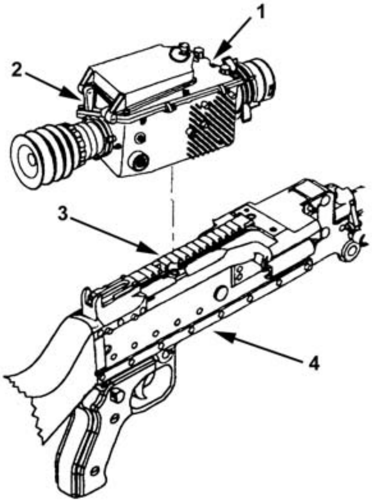
Zero Target Data for M240B

1. Stabilize Weapon.
2. Using the 10mZ reticle line, aim at the dot-cross hair.
3. Adjust the MGO until the laser borelight aligns on its dot.

10 Meter Bore Sight Target for 500m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

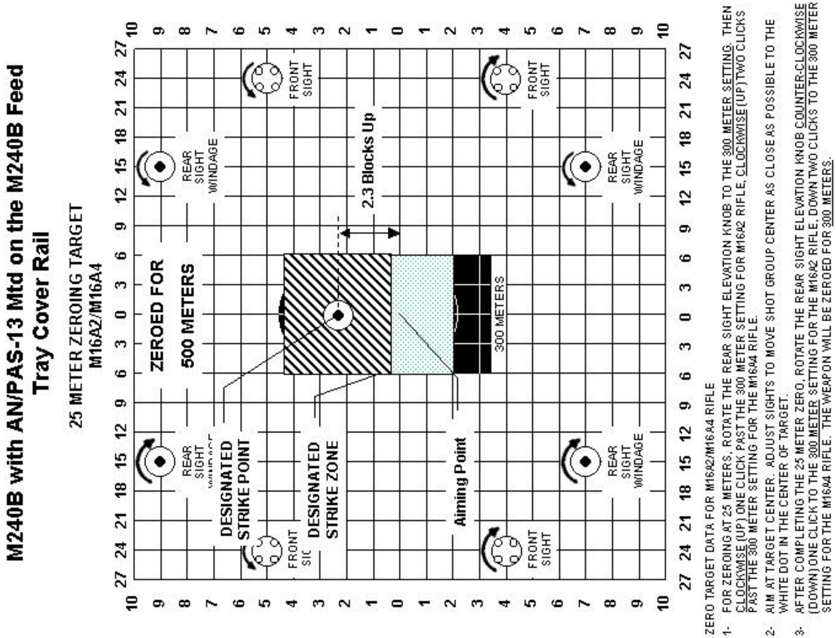


M240B – AN/PAS-13, TWS Mounting Instructions
(See Annex B for Target Prep Instructions)

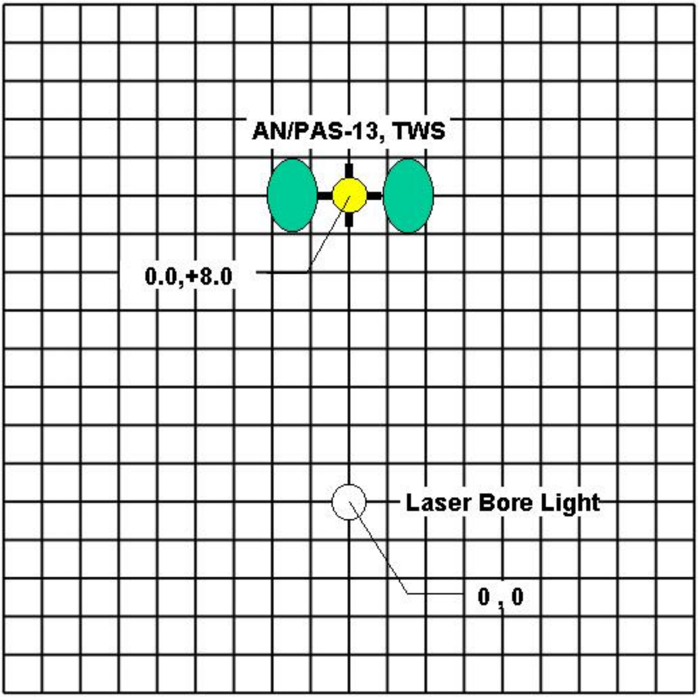
The AN/PAS-13 comes with an integrated rail grabber with torque limiting knob. This allows the MGO to be attached to the M240B Feed Tray Cover Rail with a minimum of time and effort.

1. In order to install the AN/PAS-13 (1) loosen the clamping knob (2) (hidden behind TWS) until sufficient space exits to place the clamping jaws on either side of the mounting rail (3). Tighten clamping knob (2) until two clicks are heard.
2. The AN/PAS-13 may be placed at position number 5 or back (counting from the back of the rail to the front) on the top feed tray cover rail, as long as the rail grabber/mount does not extend beyond the rail. Should the device be installed forward of the number five slot the sight will interfere with the operator's ability to raise the barrel handle and the sight's objective lens will strike the weapon, when the feed tray cover is opened.
3. If the AN/PAS-13 is removed from the rail the operator must return the device to the same position it was zeroed at in order to insure that zero is retained.

M240B—AN/PAS-13 Zero and Boresight Targets



10 Meter Boresight Tgt-AN/PAS-13 Mtd on M240B Feed Tray Cover Rail



Zero Target Data for M240B

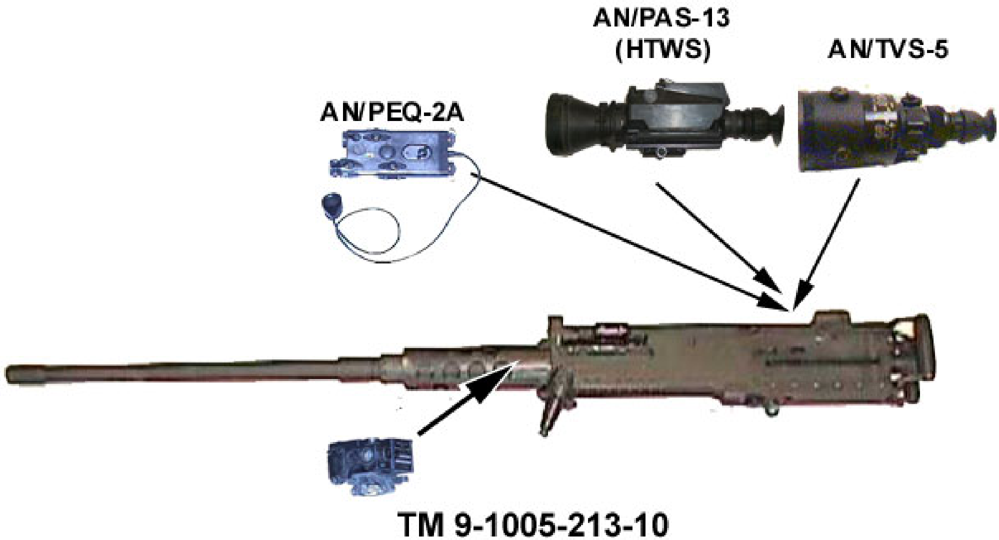
1. Stabilize Weapon.
2. Place Thermal signature material or tips of fingers on gray circles.
3. Aim between gray circles at cross-hair.
4. Adjust AN/PAS-13 until the borelight laser is centered on its dot.
5. You MUST zero reticle in both wide and narrow field of view.

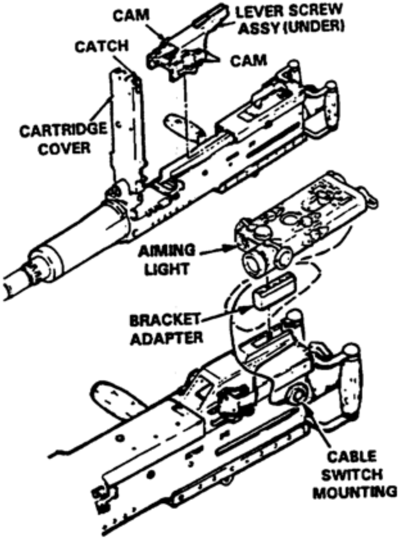
10 Meter Bore Sight Target for 500m Zero
(13 Dec 99)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

M2 Machine Gun System Diagram



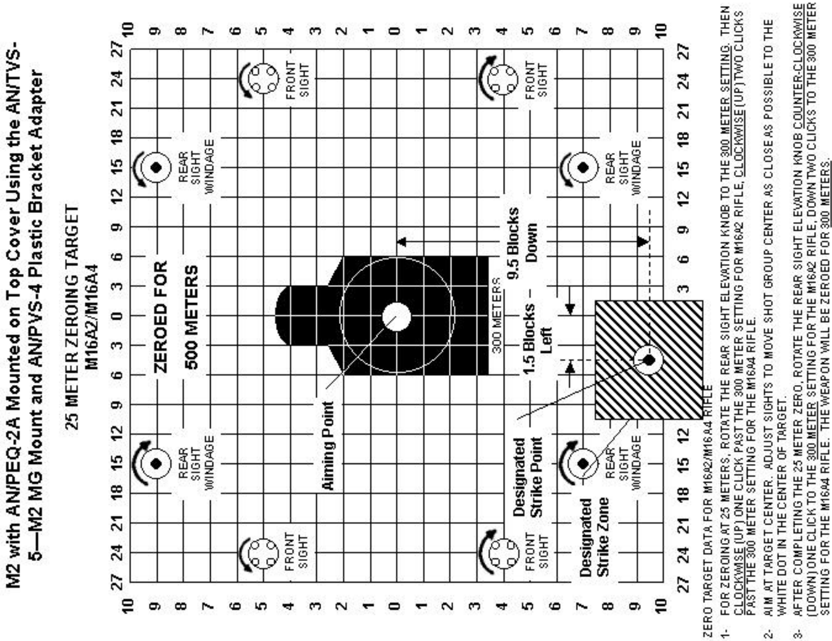


M2 – AN/PEQ-2A Mounting Instructions

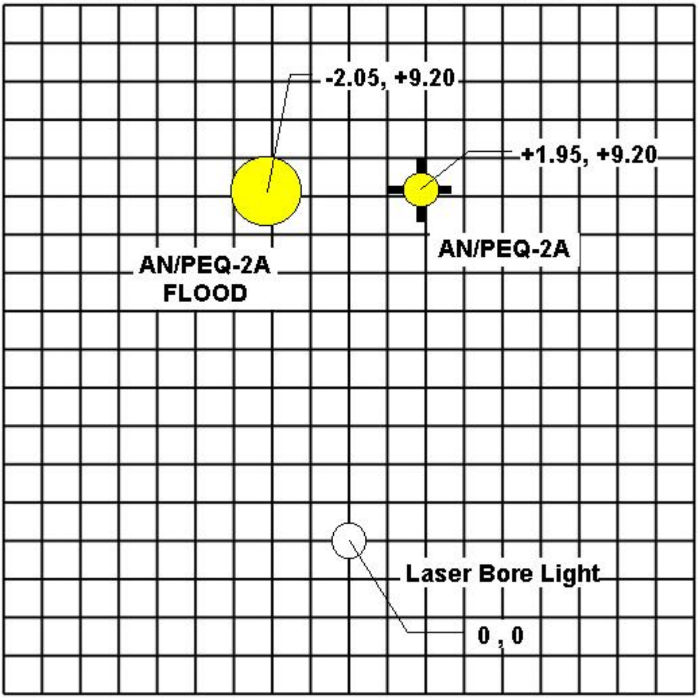
The AN/PEQ-2A is attached to the M2 Machine Gun using a Bracket Adapter (NSN: 5340-01-362-9873) and an M2 Mounting Bracket (NSN: 5855-01-045-5482).

1. Release the catch at the left side of the top cover and raise the cover to the UP position.
2. Position the M2 Mounting Bracket assembly over the breech of the Machine Gun and slide it to the rear until it stops beyond the rear edge of the breech (see Figure).
3. Swing the three locking cams to the rear to secure the bracket to the weapon (side cam first, followed by two top locking cams).
4. Close the top cover and secure with the catch.
5. Secure the Bracket Adapter to the underside of the AN/PEQ-2A.
6. Place the Bracket Adapter into the M2 bracket mounting groove with the rear of the adapter flush with the rear of the bracket. Tighten the bracket's lever screw into the Bracket Adapter hole.

M2—AN/PEQ-2A Zero and Boresight Targets



10 Meter Boresight Tgt-AN/PEQ-2A Mtd on AN/TVS-5 Feed Tray Cover Bracket and Plastic Spacer on M2 MG



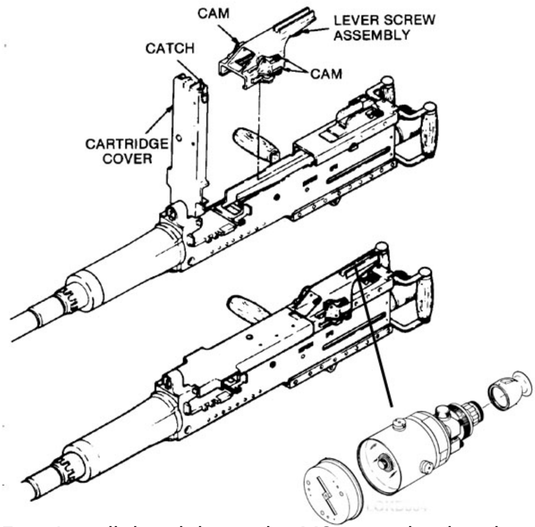
Zero Target Data for M2 MG

1. Stabilize Weapon.
2. Align Laser Borelight on it's dot.
3. Adjust AN/PEQ-2A until aiming laser is centered on the dot cross hair.

10 Meter Bore Sight Target for 500m Zero
(31 May 00)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

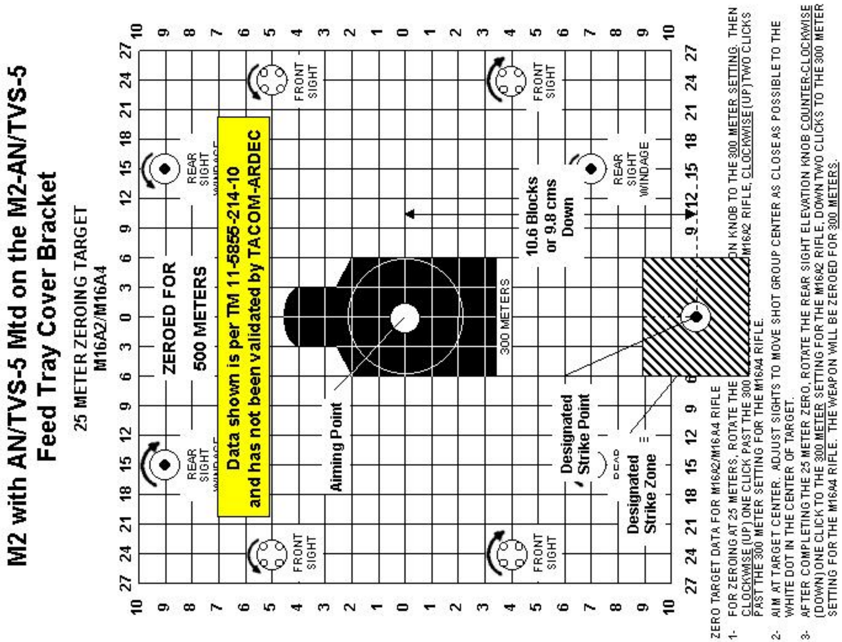
Grids are 1cm wide by 1cm high. Units must locally manufacture.



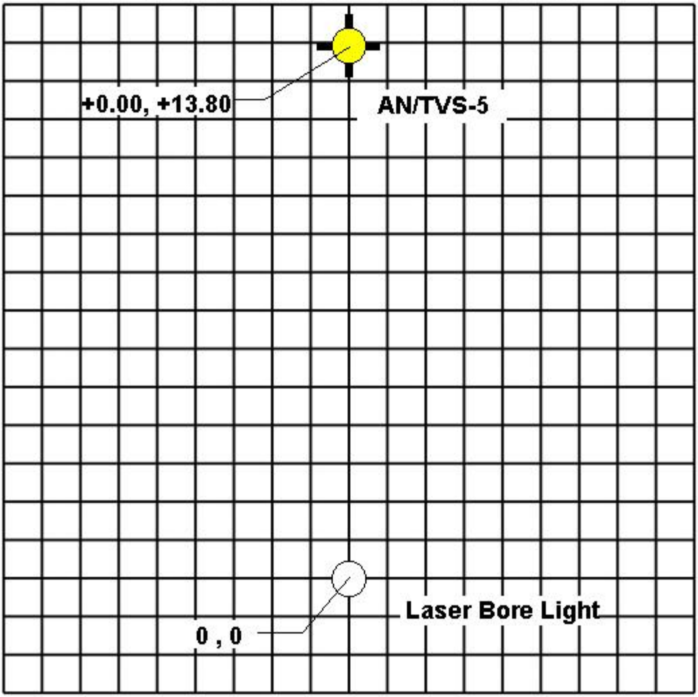
M2 – AN/TVS-5 Mounting Instructions

Install the AN/TVS-5 Mounting Bracket (NSN 5855-01-045-5482) per instructions contained in TM 11-5855-214-10.

1. Release the catch at the left side of top cover and raise cover to the UP position.
2. Position the M2 mounting bracket assembly over the breech of the machinegun and slide it to the rear until it stops.
3. Swing the three locking cams to the rear to secure the bracket to the weapon (side cam first, followed by two top locking cams).
4. Close the top cover and secure it with the catch.
5. Install the sight on the M2 mounting bracket assembly by positioning it in the groove at the top rear of the bracket so that the scribe line in the sight on the bracket is aligned with the scribe line in the sight-mounting adapter. Tighten the lever screw to secure the sight to the bracket. It will be easier to tighten the lever screw if you will place an empty cartridge case over the lever arm to increase the amount of leverage applied.


M2 with AN/TVS-5 Mtd on the M2-AN/TVS-5
Feed Tray Cover Bracket
25 METER ZEROING TARGET
M16A2/M16A4
ZEROED FOR
500 METERS
Data shown is per TM 11-5855-214-10
and has not been validated by TACOM-ARDEC
Aiming Point
Designated Strike Point
Designated Strike Zone
10.6 Blocks or 9.8 cms Down
300 METERS
FRONT SIGHT
REAR SIGHT WINDAGE
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE
1- FOR ZEROING AT 25 METERS, ROTATE THE
ON KNOB TO THE 300 METER SETTING, THEN
CLOCKWISE (UP) ONE CLICK PAST THE 300
M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS
PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.
3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/TVS-5 Mtd on AN/TVS-5 Feed Tray Cover Bracket on the M2 MG



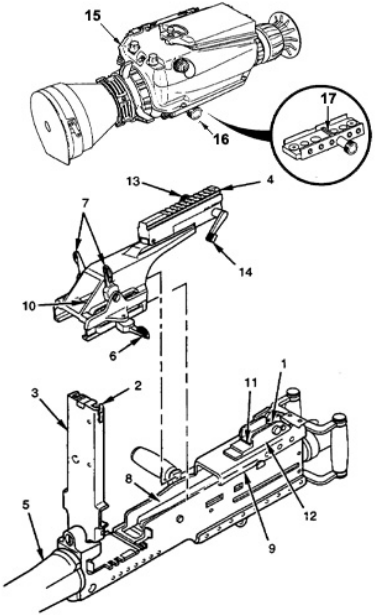
Zero Target Data for M2 MG

1. Stabilize Weapon.
2. Aim AN/TVS-5 at Cross Hair and adjust until the borelight strikes the Laser Borelight Dot.

10 Meter Bore Sight Target for 500m Zero
(31 May 00)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.



M2 – AN/PAS-13, TWS Mounting Instructions
(See Annex B for Target Prep Instructions)

Mounting HTWS on M2 Machine Gun. Refer to Figure for mounting HTWS on M2 machine gun.

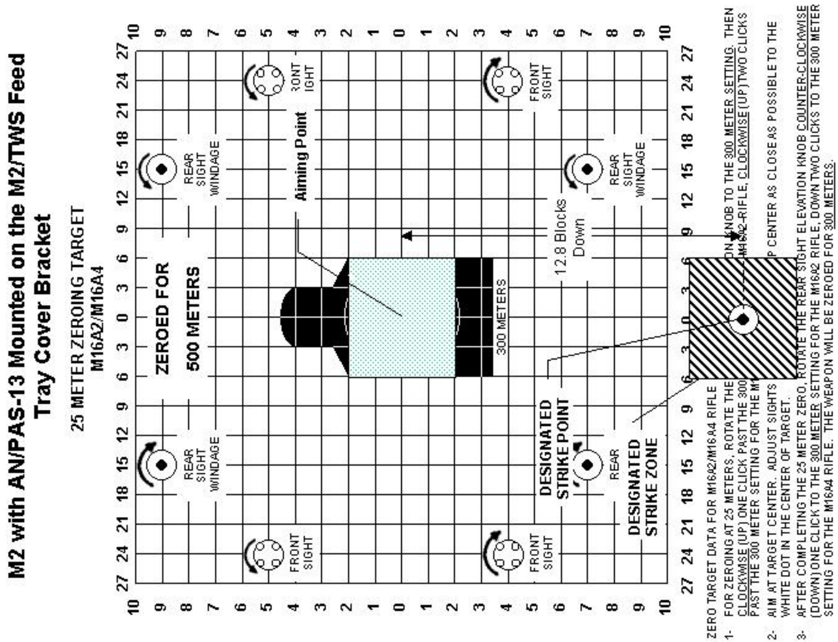
1. Fold rear sight (1) forward to storage position.
2. Release cover latch (2) at side of cover (3) and fully raise cover.
3. Mount M2 bracket (Part No. A3170570) (4) on M2 machine gun (5).
   a. Release three locking cams (6 and 7) on bracket (4).
   b. Place bracket (4) over breech (8) of M2 machine gun (5).
   c. Slide bracket (4) over ledge (9) of M2 machine gun (5) until inside edge (10) of bracket touches front edge (11) of rear sight base (12).
   d. Swing side locking cam (6) towards rear of M2 machine gun (5).
   e. Swing two top locking cams (7) towards rear of M2 machine gun (5).

f. Lower cover (3) until cover latch (2) engages.

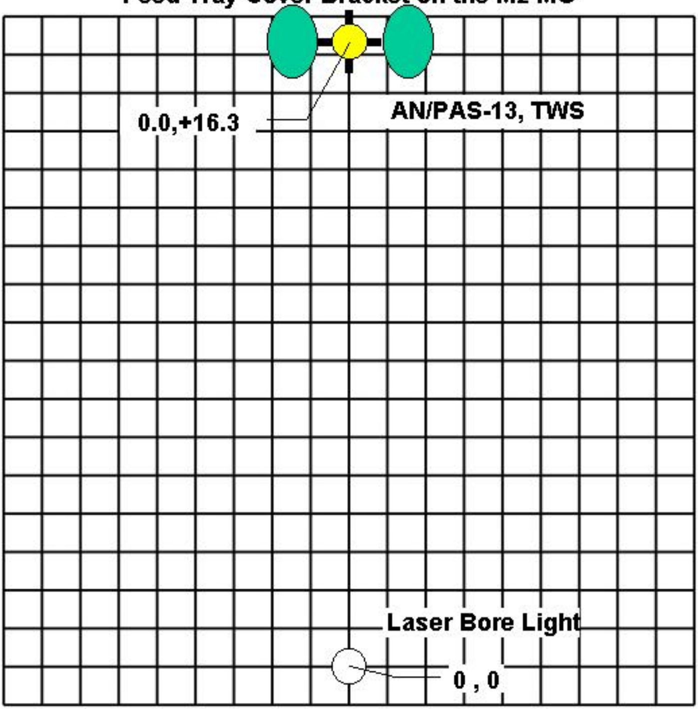
4. Loosen locking knob (13) and swing range lever (14) to NEAR position. Hand tighten knob.

5. Install HTWS (15) on bracket rail.

   a. Loosen knob (16) on rail grabber until there is sufficient space to fit the jaws on either side of the rail.
   b. Select slot a on rail for mounting. Any slot may be used as long as rail grabber/mount does not hang over edge of rail.
   c. Place bar (17) of mount in slot of rail and hand tighten knob on rail grabber/mount until two clicks are heard.


M2 with AN/PAS-13 Mounted on the M2/TWS Feed Tray Cover Bracket
25 METER ZEROING TARGET
M16A2/M16A4
ZEROED FOR
500 METERS
Aiming Point
12.8 Blocks Down
300 METERS
DESIGNATED STRIKE POINT
DESIGNATED STRIKE ZONE
REAR SIGHT WINDAGE
FRONT SIGHT
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE
1- FOR ZEROING AT 25 METERS, ROTATE THE … ON KNOB TO THE 300 METER SETTING, THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 … M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M…
2- AIM AT TARGET CENTER. ADJUST SIGHTS … P CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.
3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PAS-13 Mtd on AN/PAS-13 Feed Tray Cover Bracket on the M2 MG



Zero Target Data for M2 MG

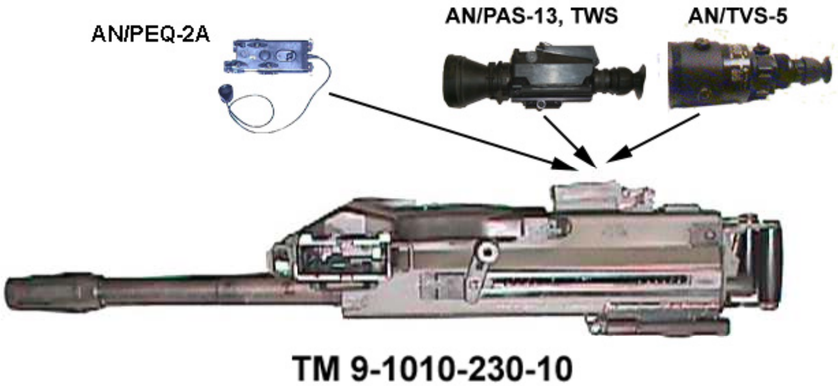
1. Stabilize Weapon.
2. Place Thermal signature material or tips of fingers on gray circles.
3. Aim between gray circles at cross-hair.
4. Adjust AN/PAS-13 until the borelight laser is centered on its dot.
5. You MUST zero reticle in both wide and narrow field of view.

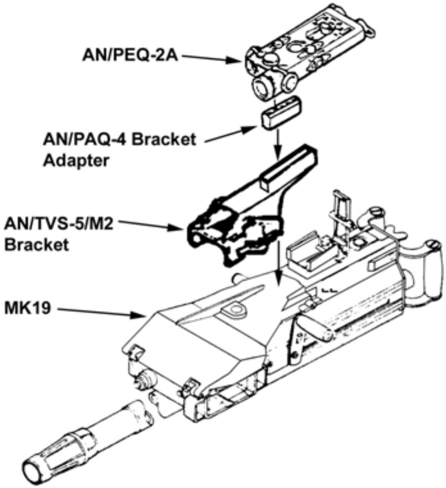
10 Meter Bore Sight Target for 500m Zero
(31 May 00)

US Army ARDEC
AMSTA-AR-CCL-A
AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07806

Grids are 1cm wide by 1cm high. Units must locally manufacture.

MK19 Grenade Machine Gun System Diagram





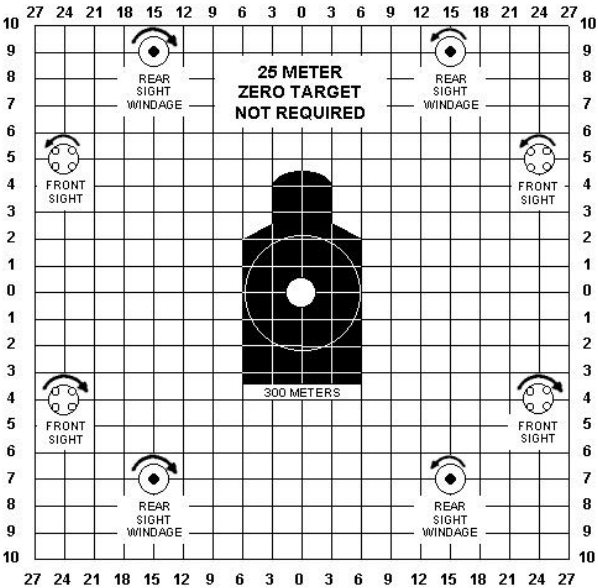
MK19 – AN/PEQ-2A Mounting Instructions

The AN/PEQ-2A is mounted to the MK19 in the same manner that theAN/PEQ-2A is mounted to the M2 machine gun, using the same mounting bracket (NSN 5855-01-045-5482) per instructions contained in TM 11-5855-214-10.

1. Release the catch at the left side of top cover and raise cover to the UP position.
2. Position the M2 mounting bracket assembly over the breech of the machinegun and slide it to the rear until it stops.
3. Swing the three locking cams to the rear to secure the bracket to the weapon (side cam first, followed by two top locking cams).
4. Close the cover and secure it with the catch.
5. Attach the AN/PEQ-2A to the bracket adapter by using the thumbscrew.
6. Install the AN/PEQ-2A on the M2 mounting bracket assembly by positioning it in the groove at the top rear of the bracket so that the scribe line in the sight on the bracket is aligned with the scribe line in the sight-mounting adapter. Tighten the lever screw to secure the sight to the bracket. It will be easier to tighten the lever screw if you will place an empty cartridge case over the lever arm to increase the amount of leverage applied.

MK19 with AN/PEQ-2A Mtd with AN/TVS-5/M2 Feed Tray Cover Bracket

25 METER ZEROING TARGET
M16A2/M16A4



ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

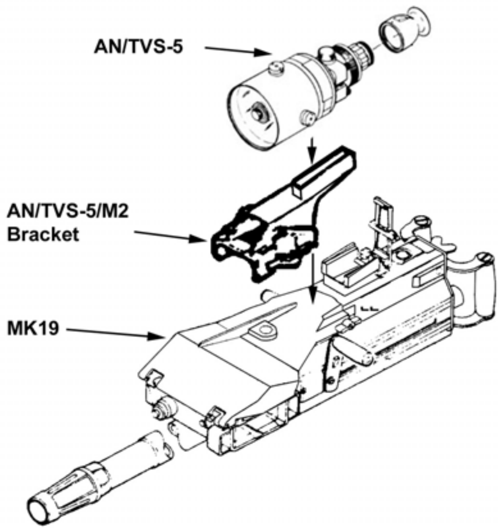
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/PEQ-2A Mtd on the AN/TVS-5--M2 MG Mounting Bracket



Grids are 1cm wide by 1cm high. Units must locally manufacture.



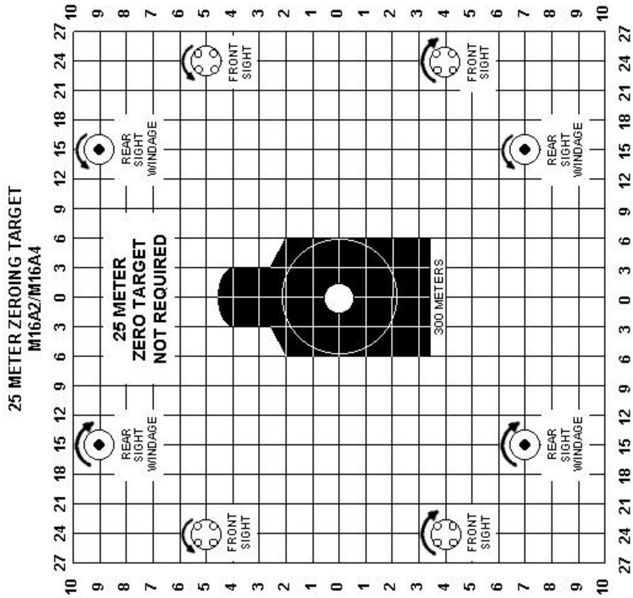
MK19 – AN/TVS-5 Mounting Instructions

The AN/TVS-5 is mounted to the MK19 in the same manner that it is mounted to the M2 machine gun, and uses the same mounting bracket (NSN 5855-01-045-5482) per instructions contained in TM 11-5855-214-10.

1. Release the catch at the left side of top cover and raise cover to the UP position.
2. Position the M2 mounting bracket assembly over the breech of the machinegun and slide it to the rear until it stops.
3. Swing the three locking cams to the rear to secure the bracket to the weapon (side cam first, followed by two top locking cams).
4. Close the top cover and secure it with the catch.
5. Install the sight on the M2 mounting bracket assembly by positioning it in the groove at the top rear of the bracket so that the scribe line in the sight on the bracket is aligned with the scribe line in the sight-mounting adapter. Tighten the lever screw to secure

MK19—AN/TVS-5 Zero and Boresight Targets

MK19 with AN/TVS-5 Mtd with AN/TVS-5/M2 Feed Tray Cover Bracket



ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

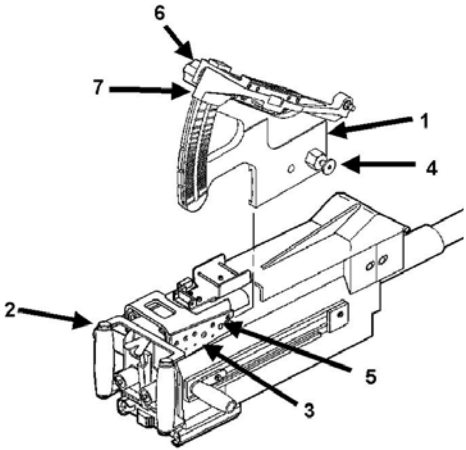
2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

10 Meter Boresight Tgt-AN/TVS-5 Mtd on AN/TVS-5--M2 MG Mounting Bracket



Grids are 1cm wide by 1cm high. Units must locally manufacture.



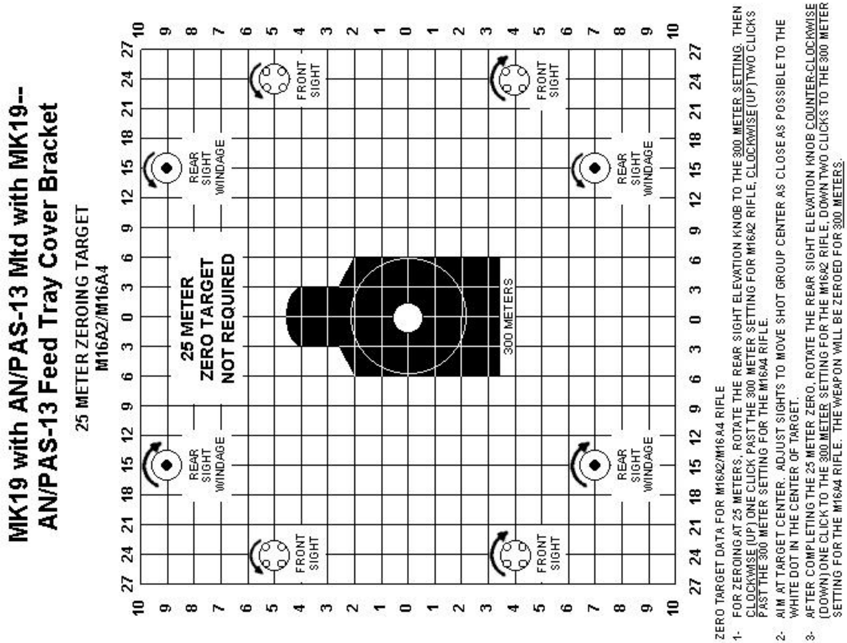
MK19–AN/PAS-13, TWS Mounting Instructions
(See Annex B for Target Prep Instructions)

1. Install MK19 bracket (1) (Part No. A3260830) on MK19 machine gun (2) IAW TM 11-5855-302-12&P.
2. Slide MK19 bracket (1) onto mount (3) until locking pin (4) engages in hole (5) of mount.
   a. Confirm locking pin (4) is fully engaged.
   b. Raise arm (6) of bracket (1).
   c. Loosen locking knob (7).
   d. Push in locking knob (7) and raise arm (6) to up most position (2057 meters).
   e. Hand tighten locking knob (7).
3. Install HTWS (not shown) on rail.
   a. Loosen TWS grabber knob.
   b. Select slot on rail for mounting. Any slot may be used as long as mount does not hang over edge of rail.
   c. Place bar of mount in slot of rail and hand tighten knob on mount until two clicks are heard.

Note: Mount (3) previously installed by supporting direct support maintenance unit.

1. Select a fixed target at 400 to 600 meters.
2. Set range on MK19 bracket to range of target.
3. Place TWS in operation.
4. Set FOV ring to NARROW position.
5. Press and release RETICLE SELECT switch until display shows reticle for MK19 machine gun.
6. Use the RETICLE ADJUST switch to set Azimuth and Elevation indicators to zero.
7. Place reticle aim point on center of mass of target by moving Traverse and Elevation mechanism (T and E) of gun. Fire one round and observe impact of round.
8. Adjust reticle to move impact of round to center of mass of target.
    a. If impact of round Is behind target, use the RETICLE ADJUST switch to decrease the up elevation setting or increase the down elevation setting.
    b. If impact of round is in front of target, use the RETICLE ADJUST switch to increase the up elevation setting or decrease the down elevation setting.
    c. If impact of the round is left of target, use the RETICLE ADJUST switch decrease the left azimuth setting or increase the right azimuth setting.
    d. If impact of round is right of target, use the RETICLE ADJUST switch to increase the left azimuth setting or decrease the right azimuth setting.
9. Repeat steps 7 and 8 until round impacts target.
10. Record setting of Azimuth and Elevation indications.

MK19—AN/PAS-13, TWS Zero and Boresight Targets



10 Meter Boresight Tgt-AN/PAS-13 Mtd on AN/PAS-13--MK19 GMG Mounting Bracket



Grids are 1cm wide by 1cm high. Units must locally manufacture.

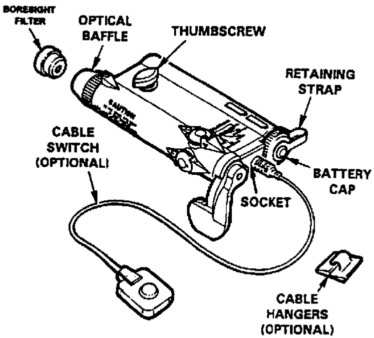
ANNEX A – REFERENCES

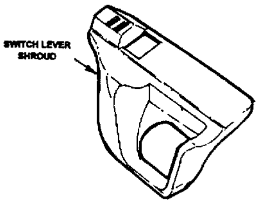
TM 9-1005-201-10	Operator’s Manual, Machine Gun, 5.56mm, M249 W/Equip, dtd July 1991
TM 9-1005-213-10	Operator’s Manual, Machine Gun, 50 caliber, M2 HB
TM 9-1005-224-10	Operator’s Manual, Machine Gun, 7.62mm – M60
TM 9-1005-306-10	Operator’s Manual, 7.62mm M24 Sniper Weapon System (SWS), dtd June 1989
TM 9-1005-313-10	Operator's Manual For Machine Gun, 7.62mm, M240, M240B, M240C, M240E1, M240G, dtd Jul 96
TM 9-1005-319-10	Operator's Manual, M16A2/M16A3/M16A4 Rifles and M4/M4A1 Carbines, dtd October 1998
TM 9-1010-221-10	Operator's Manual: Grenade Launcher, 40mm-M203
TM 9-1010-230-10	Operator’s Manual, Grenade Machine Gun 40mm – MK19
TM 9-1010-221-23&P	Unit/DS Maintenance Manual, RPSTL: Grenade Launcher, 40mm-M203 W/E
TM 9-1240-413-12&P	Operator and Unit Maintenance Manual Including Repair Parts and Special Tools List for M68 Sight, Reflex (Close Combat

	Optic), w/Quick Release and Mount, dtd October 1997
TM 9-1240-415-13&P	Operator, Unit and Direct Support Maintenance Manual Including Repair Parts and Special Tools List for M145 Telescope (Machine Gun Optic), undated
TM 11-5855-213-10	Operator's Manual, AN/PVS-4 (Night Vision Sight, Individual Served Weapon), dtd 1 February 1993
TM 11-5855-214-10	Operator’s Manual, Night Vision Sight, Crew Served Weapon, AN/TVS-5, dtd 15 February 1989
TM 11-5855-301-12&P	Operator’s and Unit Maintenance Manual (Including Repair Parts and Special Tools List) Light, Aiming, Infrared, AN/PAQ-4B/C, dtd 15 August 1996
TM 11-5855-301-12&P	Operator’s and Unit Maintenance Manual (Including Repair Parts and Special Tools List) Light, Aiming, Infrared, AN/PAQ-4B/C - DRAFT, dtd 12 December 1997
TM 11-5855-302-12&P	Operator's and Unit Maintenance Manual, Sight-Thermal, AN/PAS-13 (V) 2&3, dtd 1 January 1997
TM 11-5855-303-12&P	Operator’s and Unit Maintenance Manual (Including Repair Parts and Special Tools

	List), Sight, Night Vision Sniper Scope AN/PVS-10, dtd 1 August 1997
TB 11-5855-303-12	Technical Bulletin, Operator's Pamphlet, Sight, Night Vision Sniper Scope (SNS), AN/PVS-10, dtd 1 August 1997
TM 11-5855-306-10	Operator's Manual, Monocular Night Vision Device (AN/PVS-14), dtd 1 Jan 00
TM 11-5855-308-12&P	Operators' and Unit Maintenance Manual (Including Repair Parts and Special Tools List) Target Illuminator/Aiming Light (TPIAL) AN/PEQ-2A - DRAFT, dtd 2 March 1998
SW215-B3-OMI-010	Operator's Manual, AN/PEQ-2A (Infrared Illuminator), dtd 10 September 1996

AN/PAQ-4B/C, Light Aiming, Infrared





Batteries: BA-3058/U (x2)

AN/PAQ-4B/C Operating Instructions
(TM 11-5855-301-12&P, 15 Aug 96)
General Functional Description

The Aiming Light projects an infrared laser beam which cannot be seen with the eye but can be seen with NVG's. The Aiming Light mounts on various weapons with Mounting Brackets and adapters.

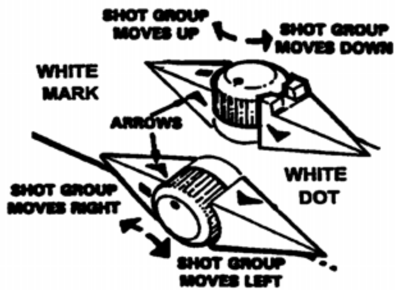
The Aiming Light is activated by pressing on either the ON/OFF Switch lever, or the button on the optional Cable Switch. Either switch connects power from two AA Batteries to an internal electronic circuit, which produces the infrared laser. Internal lenses focus the infrared light into a narrow beam.

The direction of the beam is controlled by rotating the mechanical Adjusters with click detents. These adjusters are used to zero the Aiming Light to the weapon. Once zeroed to the weapon, the Aiming Light projects the beam along the line of fire of the weapon. The Optical Baffle prevents off-axis viewing of the Aiming Light beam by the enemy.

AIMING LIGHT CONTROLS AND INDICATORS
Adjusters.

Adjusters enable the Aiming Light to be zeroed to the weapon. Adjuster movement has audible and tactile clicks. When mounted on the weapon, each click moves the shot group 0.4 Inches at 25 meters (0.4 mrad). This equals one square on a M16A2 25-meter zeroing target.

- The arrow printed on the flange on either side of the adjuster knobs indicates the direction of shot group movement.
- To move the shot group in the direction of the arrow place a finger on the side of the adjuster knob between the arrows and rotate the knob in the direction which moves the finger towards the arrow.
- At the full clockwise end of travel of either adjuster, the adjuster becomes harder to turn and the white dot on the adjuster knob will align within 2 clicks of the white mark on the knob's front flange.

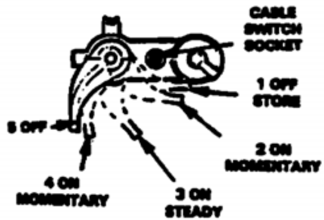


b. ON/OFF Switch

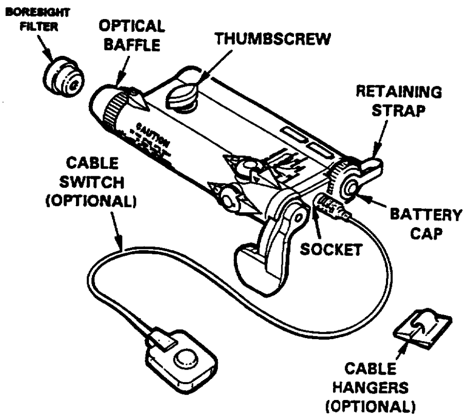
The ON/OFF switch has five positions (see table). The label printed on top of the Aiming Light only shows the switch function location, not the position number.

Table 2-1. Switch Positions

Position	Function	Used for Weapons
1	OFF/ STORAGE	M2, M4, M60, M249, M16/M203, M136
2	ON MOMENTARY	M249, M4, M16/M203
3	ON STEADY	M2, M60, M136.
4	ON MOMENTARY	M16A1/A2
5	OFF	M16A1/A2



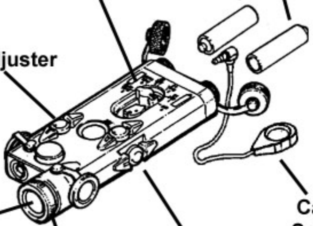
The Cable Switch provides momentary "Operation for the Aiming Light when mounted on selected weapons. The ON/OFF Switch must be in the OFF (#1 or #5) position for the button on the Cable Switch to properly activate the Aiming Light. Optional cable hangers are provided for securing the cable to the weapon.



"If environmental conditions are such that the soldier's ability to conduct a 25m zeroing of the device and weapon is being hindered due to "IR Blooming" one to the following methods should be used to reduce the blooming effect:

1. Install the Borelight Filter which was issued with the device. If it is not dark enough for this method to work effectively use method 2, as outlined below.

2. Cut a 2 by 2 square block out of the center of the target. The laser will bloom on the zero target until the aiming laser is emitting through the 2 x 2 hole. Once the laser is properly centered on the hole the blooming is reduced and zeroing may continue with a higher assurance of completing a successful zero."



Batteries: BA-3058/U (x2)

AN/PEQ-2A Operating Instructions
(TM11-5855-308-12&P, 30 Mar 99)

1. Battery Installation. Unscrew the battery caps and install 2 AA batteries. Orient the batteries as indicated by the markings on the AN/PEQ-2A body.

2. Mode Selector. The mode selector is used to set the mode in which the AN/PEQ-2A will operate when the cable switch button or push button are depressed. The mode selector positions are:

WARNING

The AN/PEQ-2A makes use of a high power aiming laser and presents a serious eye hazard within 25 meters, when used in the training mode, and within 220 meters, when used in the tactical mode.

KNOB POSITION	OPERATION	REMARKS
0 OFF	The AN/PEQ-2A will not operate	When underwater, the mode switch should be OFF to preclude water pressure on the button switch from inadvertently turning ON the unit.
1 AIM LO	The aiming beam operates at low power.	Low power is useful to reduce night vision device blooming of the aiming spot on close targets. It is also useful for training because the beam power meets the criteria of an eye-safe laser.
2 DUAL LO	The Aiming beam operates at low power and the illuminating beam operates at low power	Low power aiming and illuminating is useful to reduce the effects of blooming when engaging targets at close range. It is also useful for training because the beam power meets the criteria of an eye-safe laser.
3 AIM HI	The aiming beam operates at high power..	Hi power is useful for aiming or pointing at distant targets.

a. **Button Operation**. Press the button to operate AN/PEQ-2A. When the button is released the AN/PEO-2A turns off. Tap the button twice quickly for operation. Tap it once more to turn off operation.

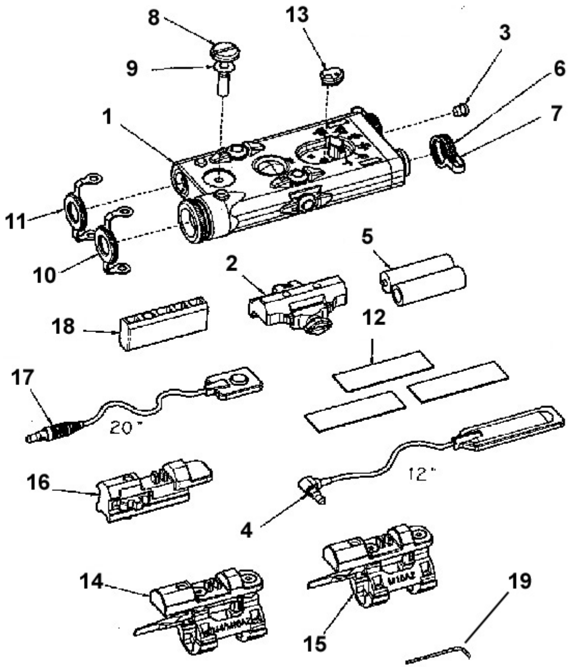
b. **Cable Switch**. Plug the cable into the back of the 2A. Press the button or pad to operate. Release the button or pad to turn the AN/PEA-2A off. Tap the button or pad twice quickly for continuous action. Tap it once more to turn off continuous action.

Laser Target Preparation

If environmental conditions are such that the soldier's ability to conduct a 25m zeroing of the device and weapon is being hindered due to "IR Blooming" one to the following methods should be used to reduce the blooming effect:

1. Install the Borelight Filter which was issued with the device. If it is not dark enough for this method to work effectively use method 2, as outlined below.
2. Cut a 2 by 2 square block out of the center of the target. The laser will bloom on the zero target until the aiming laser is emitting through the 2 x 2 hole. Once the laser is properly centered on the hole the blooming is reduced and zeroing may continue with a higher assurance of completing a successful zero.

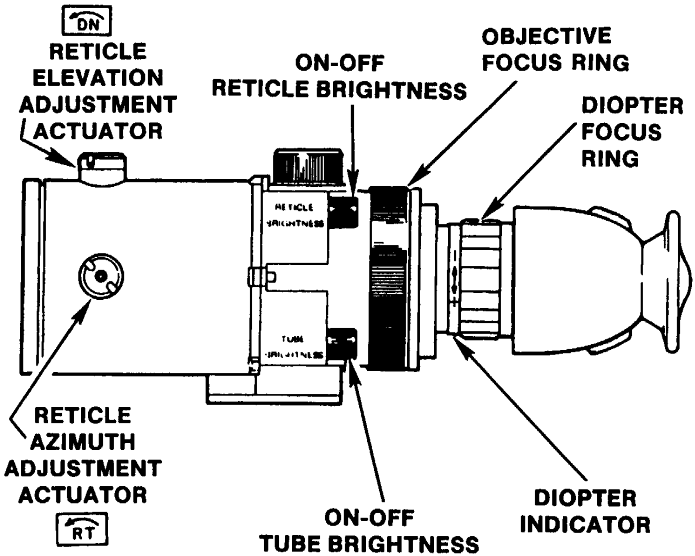
AN/PEQ-2A TPIAL COMPONENT LIST



AN/PEQ-2A
(Components List)

ITEM	DESCRIPTION	PART NO./NSN
1	TPIAL Assembly	ITP-501
2	Rail Grabber Mounting Bracket	ITP-090
3	Jack Plug	HKL-313
4	Cable Switch, 12 inch, membrane	ITP-053
5	Battery, 2 AA	BA-3058/U
6	Battery Cap Assembly	A3186954
7	Retainer/Gasket	A3139224
8	Thumbscrew	ITP-076
9	Washer, Conical Spring	4B-819
10	Lens Cap, Diffuser, Illuminator	ITP-054
11	Lens Cap, Neutral Density	ITP-087
12	Fastener tape, loop	ITP-044
13	Safety Block Assy	ITP-022
14	M4/M16A2 Bracket Assy (Army only)	A3186958
15	M16A2 Bracket Assy (Marine only)	A3259265
16	Training Extender (Army only)	A3267739
17	Cable Switch, 20 inch remote, button	A3259273
18	Bracket Adapter	A3186952
19	Key, socket Head Screw (3mm)	5120-01-045-4888

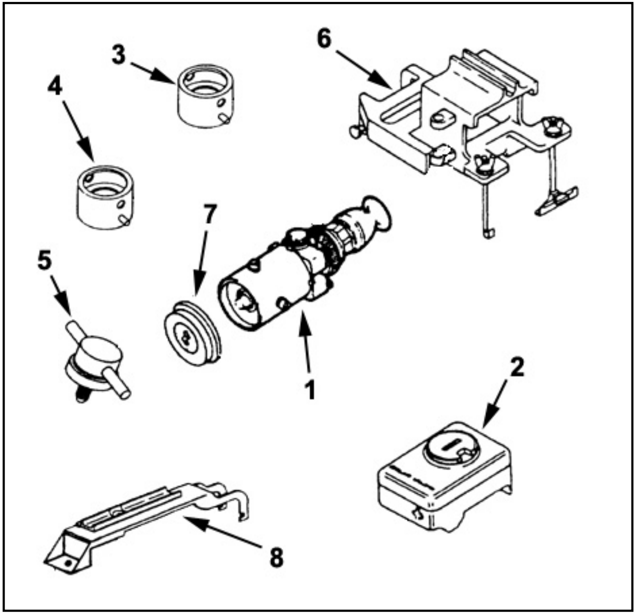
AN/PVS-4, Night Vision Sight, Individual Served Weapon



Batteries: BA-5567/U (x1) or BA-3058/U (x2)

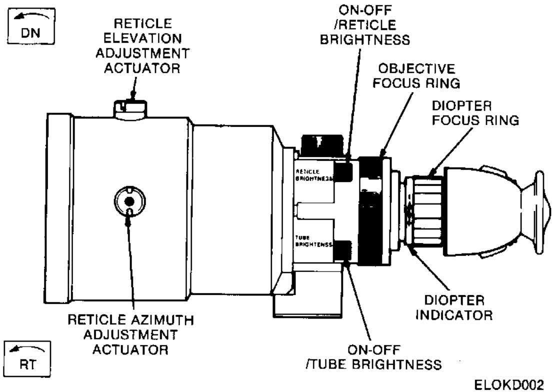
1. Turn the ON-OFF/TUBE BRIGHTNESS switch and ON—OFF/TUBE BRIGHTNESS switch and ON—OFF/RETICLE BRIGHTNESS switch counterclockwise to OFF before installing batteries.
2. Install batteries.
3. Press your eye against the eyeguard to open the rubber leaves that prevent emission of stray light.
4. Turn the ON-OFF/TUBE BRIGHTNESS control as shown, clockwise to turn on the sight.
5. Adjust the ON-OFF/TUBE BRIGHTNESS control to the setting that provides the best target-to-background contrast at a minimum distance of 25 meters.
6. Turn the ON-OFF/RETICLE BRIGHTNESS control clock-wise to turn on the light emitting diode. Adjust the reticle light intensity so that the reticle is just visible against the background.
7. Turn the diopter focus ring until you get the clearest image of the reticle pattern.
8. Turn the objective focus ring until the target in the field of view is sharply defined at aiming distance of 25 meters.
9. Turn the ON-OFF/RETICLE BRIGHTNESS and ON/OFF/TUBE BRIGHTNESS control fully counterclockwise to off position when you are through using the sight. Remove battery or battery adapter.

AN/PVS-4, Night Vision Sight
(Component List)



Item No	Nomenclature	Part No./NSN
1	Night Vision Sight	5855-01-017-7366
2	AA Battery Adapter	5855-01-152-0506
3	Reticle Cell Assy, M16A2 and M203	5855-01-039-2854
4	Reticle Cell Assy, M60, M14	5855-01-039-2853
5	Mounting Knob Assy, M16A2	5355-01-039-2834
6	Mounting Bracket, M60	5855-01-046-7272
7	Daylight Cover	5855-01-252-5428
8	Mounting Bracket, M249	3040-01-233-0352

AN/TVS-5, Night Vision Sight, Crew Served Weapon



Batteries: BA-5567/U (x2) or BA-3058/U (x2)

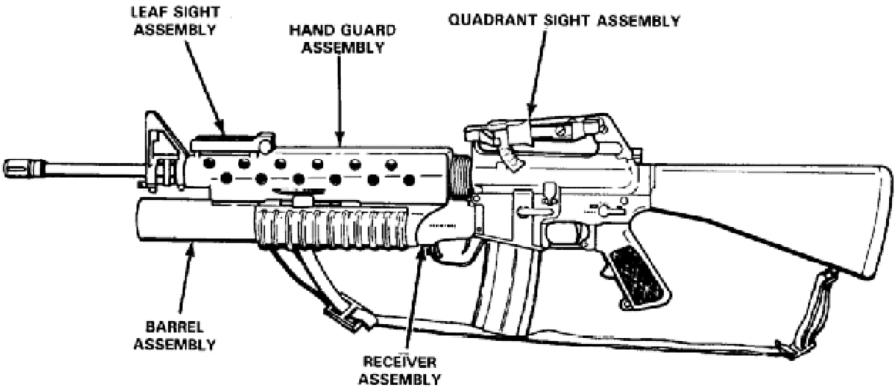
AN/TVS-5 Operating Instructions

(TM 11-5855-214-10, 15 Feb 89)

The AN/TVS-5 is a portable, battery operated electro-optical instrument used for observation and aimed fire of weapons at night. It amplifies reflected light such as moonlight, starlight, and skyglow so that the viewed scene becomes clearly visible to the operator. The sight does not emit visible or infrared light (except from the eye-piece) that can be detected by the enemy. See following table for operating instructions.

Name	*Function*
ON-OFF/TUBE BRIGHTNESS	Applies power to sight. Enable ON_OFF RETICLE BRIGHTNESS control to function. Controls brightness of image intensifier tube.
ON-OFF RETICLE BRIGHTESS	Applies power to reticle. Controls brightness of reticle.
OBJECTIVE FOCUS RING	Adjusts system focus from 25 meters to infinity.
DIOPTER FOCUS RING	Adjusts focus of eyepiece
DIOPTER INDICATOR	Indicates direction of rotation of diopter focus ring for + or – diopter
RETICLE ELEVATION ADJUSTMENT ACTUATOR	Controls reticle adjustment up or down. Each click of adjustment moves strike of round fired 1.0 inch at 100 meters.
RETICLE AZIMUTH ADJUSTMENT ACTUATOR	Controls reticle adjustment right or left. Each click of adjustment moves strike of round fired 1.0 inch at 100 meters.
RETICLE PATTERNS	Indicate aiming points of weapons and provide ranging information.

M203 Grenade Launcher



In order to mount the AN/PSX-1, CIDDS, Interrogator on the M203 the M203 Leaf Sight Assembly must be removed.

Grenade Launcher Instructions
(TM 9-1010-221-10)

1. The M203 Grenade Launcher attaches to either the M16 series Rifle or the M4 series Carbine.
2. The M203 launches a 40mm grenade within the following range limitations.

- Maximum Range: 400 meters
- Maximum Effective Range:
  - Area target: 350 meters
  - Point target: 150 meters
- Minimum Safe Range:
  - Combat: 31 meters
  - Training: 130 meters

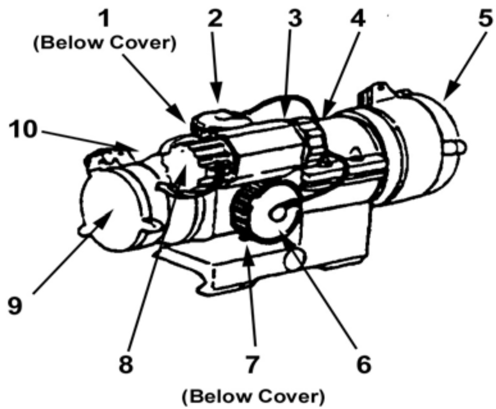
WARNING

When you fire high explosive (HE) greandes at targets within 130 meters be in a protected position. When training, do not fire at targets within 130 meters. When in combat, do not fire at targets closer than 31 meters.

3. The M203 is mounted on the M4 Carbien and the M16 Rifle by the unit's Direct Support Maintenance Company. Unit personnel are not authorized to, and should not attempt to, install the M203 on the weapon.

M68-Close Combat Optic

1. Elevation Adjustment Screw
2. Adjustment Cap
3. Battery (Installed in Battery Compartment)
4. Batter Cap
5. Front Lens Cover
6. Adjustment Cap
7. Windage Adjustment Screw
8. Rotary Switch
9. Rear Lens Cover
10. Torque Knob (Behind M68)



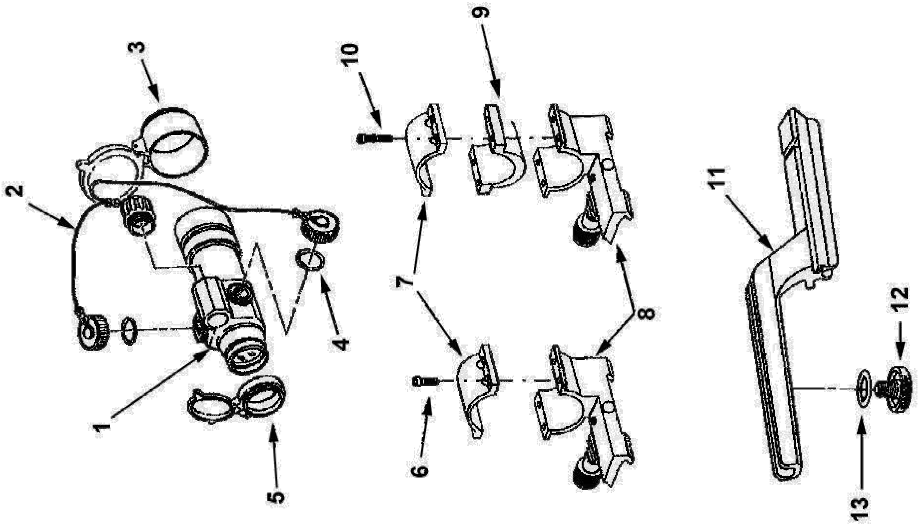
TM 9-1240-413-12&P
Dtd October 1998

CAUTION

Hand tighten adjustment caps only. Using tools to tighten adjustment caps could damage equipment.

WARNING

At higher intensity settings, red dot is visible through front of sight. For night vision operations, close front lens cover before turning rotary switch counterclockwise to OFF position. Failure to follow this warning could reveal your position to your enemy.


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M68, SIGHT REFLEX (CCO)
With Quick Release and Mount

Component List

ITEM	DESCRIPTION	PART NO/NSN
1	Sight	05681031
2	Cap Wire Assembly	1240-01-440-7609
3	Cover, Gunsight	1005-01-442-8739
4	O-Ring	5330-01-442-4507
5	Cover, Gunsight	1005-01-442-8743
6	Bolt, Machine (M16)	5306-01-442-2407
7	Spacer Plate	5365-01-442-1698
8	Base Assembly	05680850
9	Spacer, Special Shaped (M4)	5365-01-448-8912
10	Screw, Machine (M4)	5305-01-448-9826
11	Rail	05680655
12	Screw, Machine	5305-01-442-2408
13	O-Ring	5330-01-442-4502

To obtain a complete M68 with Quick Release and Mount order 1240-01-411-1265.
To obtain a complete M16 Mounting Bracket order 1240-01-410-7427.

The M68 Close Combat Optic does not require a target offset. Zero procedures are as follows:

- Elevation adjustment screw is located on top of sight. Windage adjustment screw is located on right side of sight.
- The M30 Boresight may be used to transfer zero to weapon/sight combinations identically configured to a master weapon. The offset of M68 is the same as iron sights for M16 and M4 weapons.
- Adjustment is centered at the factory. To provide maximum adjustment, do not adjust screws until sight is mounted.
- Sight has a circular sized adjustment area with a diameter of 3.0 in at 100 yards.

1. In order to use iron sights for initial zeroing of M68 sight, zero weapon using established procedures in TM 9-1005-319-10. On M4/M4A1 and M16A4, re-confirm zero if M68 sight is moved to a different slot on the rail. If not using iron sights for initial zeroing, go directly to step 8.
2. Open front and rear lens covers.
3. Turn rotary switch clockwise until red dot intensity contrasts suitably with target background.
4. Look through sight to get a rough estimate of zeroing adjustment required. When looking through iron sights, red dot should appear on top of front post.
5. If adjustment is required, remove adjustment screw caps from adjustment screws by turning counterclockwise.
6. Insert adjustment tool (coin, screwdriver, and knife) in adjustment screw slot. Turn adjustment screw as follows:
7. To move the point of impact to the right, turn windage adjustment screw counterclockwise.

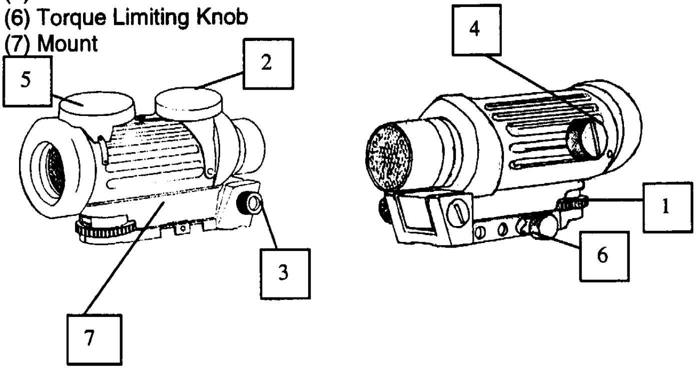
8. To move the point of impact to the left, turn windage adjustment screw clockwise.
9. To move point of impact up, turn elevation adjustment screw counterclockwise
10. To move the point of impact down, turn elevation adjustment screw clockwise.
11. Repeat steps 4 and 6 until sight is roughly zeroed.
12. Confirm zeroing by firing at least three shots at a zeroing target. Check impact points on zeroing target to confirm accuracy.

Note

After initial firing, check to ensure that mount and sight (M16A2) or sight (M4/M4A1/M16A4) are secure. On M16A2, hand tighten mounting bolt on mount then hand tighten torque knob on sight until it snaps twice. On M4/M4A1/M16A4, hand tighten torque knob on sight until it clicks twice.

13. If zeroing is accurate, fire three more shots to confirm. If zeroing is not accurate, repeat steps 6 and 8 until zeroing is complete.
14. Turn rotary switch to OFF position (counterclockwise).
15. Close front and rear lens covers.

(1) Elevation Adjustment Dial
(2) Front Lens Cover
(3) Windage Adjustment Knob
(4) Rotary Reticle Illumination Switch
(5) Rear Lens Cover
(6) Torque Limiting Knob
(7) Mount



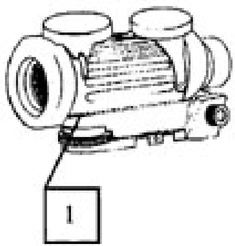
Batteries: OE890 (x1)

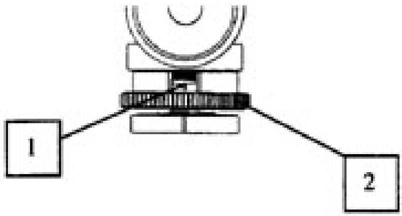
MGO Operating Instructions

(TM 9-1240-415-13&P)

Elevation Adjustment Dial

Used for zeroing the telescope to the weapon. The dial can only be rotated when the silver lock (1) is moved to the UP position. Turning the elevation adjustment dial (2) clockwise (to the left) one click moves the point of impact up 2.5mm at 10 meters.

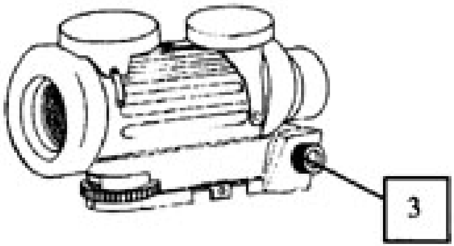




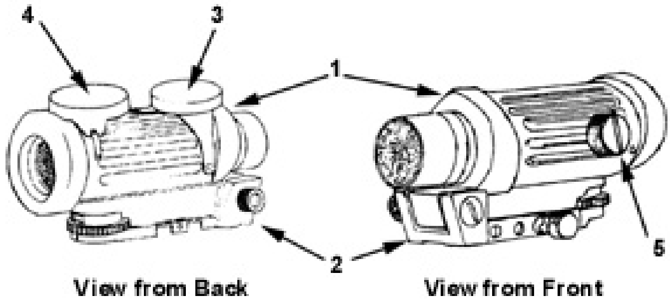
Turning the elevation adjustment dial (2) counter-clockwise one click moves the point of impact up 2.5mm at 10 meters. Ensure that the silver lock (1) is moved down to prevent the elevation adjustment dial from being MOVED.

Windage Adjustment Knob

Used when zeroing weapon. Turning windage adjustment knob (3) clockwise one click moves the point of impact left 2.5mm at 10 meters. Turning windage adjustment knob (3) counter-clockwise one click moves the point of impact right 2.5mm at 10 meters.



M145 Telescope (Machine Gun Optic)
(Component List)



Item No	Nomenclature	Part No./NSN
1	Sight	36126 901605-001
2	Mount	36126 901614-001
3	Front Cap Assy	1659-Fcap
4	Rear Cap Assy	1659-Rcap
5	Battery Cap	36126 901583-001

To obtain an entire M145 Telescope order
NSN 1240-01-411-6350

Mechanical Zero

1. Adjust the Straight Telescope so that the weapon's barrel and optical sighting axis are in approximate alighment. The sighting axis will be approximately 2-3 inches above the machine gun barrel and therefore the strike of the bullet at 10m range will also be approximately 2-3 inches low without further zeroing adjustment.
2. To bring the strike of the bullet up to meet the line of sight through the M145, lift the silver lock and rotate the elevation adjustment dial clockwise (to the left) approximately one full turn.

NOTE:

Each click of the zeroing adjustments makes a 2.5 mm movement of the point of impact at 10m.

a. To move the point of impact to the right, turn windage adjustment screw counterclockwise.
b. To move the point of impact to the left turn the windage adjustment screw clockwise.
c. To move point of impact up, turn elevation adjustment screw counterclockwise.
d. To move point of impact down, turn elevation adjustment screw clockwise.

10m Range Zeroing

In the zeroing process, groups of three single shot rounds are fired at a target. After each three rounds, the center of the group has to be determined.

1. Look through the telescope and align the reticle's 800m mark on the center base of the aiming points on the basic machine gun marksmanship target.
2. Fire three single rounds loaded individually without making any sight adjustments.
3. The three shot group should be within a 4 cm circle to establish the center of the shot group in relation to the center base of the aiming paster.
4. Measure the amount of movement required left or right (windage) and either up or down (elevation) to move the three shot group onto the center of the aiming paster.
5. Windage correction: upon completion, return to the firing line to make corrections to the weapon and re-fire a three shot group to confirm zero.

Repeat the above steps 1-5 until the strike of the round is coincident with the center of the target. Close the silver lock down to prevent any further movement of the elevation zeroing adjustment dial.

The M145 Straight Telescope is now 10m zeroed.

<u>500m Range Zeroing</u>

This procedure follows zeroing at 10 meters, as previously described. Zeroing at 10 meters will provide an M145 weapon zero, which will require re-adjustment at 500m range.

1. Look through the telescope and align the reticle's **<u>500m</u>** mark on the center of mass of the double **"E"** silhouette target.
2. A) M60 and M240B weapon = Fire a 6 to 9 round burst.
   b) M249 weapon = Fire a 3-round burst.

3. Determine strike fo the round through the telescope or inspect the target to determine center of shot group.
4. Determine direction of impact movement required (up or down, left or right).
5. Estimate or measure the amount of movement required to move the strike of the round to the center of the target (at 500 meters; five inches equals one click of adjustment in both windage and elevations).

Repeat the above steps 1-5 until the strike of the round is coincident with the center of the target. Close the silver lock down to prevent any further movement of the elevation zeroing adjustment dial.

The M145 Straight Telescope is now zeroed and ready for operational shooting.

MILES – Multiple Integrated Laser Engagement System







MILES Operating Instructions

A wide variety of MILES equipment is available for employment on different weapons systems. MILES equipment, installation and operating instructions are available from most installation Training and Audiovisual Support Center. The MILES provides for:

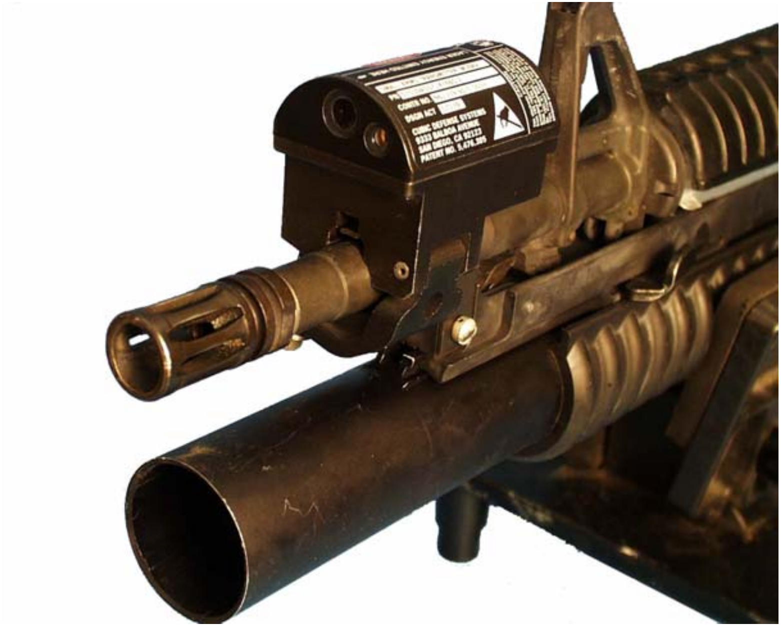
- Tactical engagement simulation for direct fire force-on-force training using eye safe laser "bullets".
- Each individual and vehicle in the training exercise has a detection system to sense hits and perform casualty assessment.
- Laser transmitters are attached to each individual and vehicle weapon system and accurately replicate actual ranges and lethality of the specific weapon systems.
- MILES training has been proven to dramatically increase the combat readiness and fighting effectiveness of military forces.
-

Various types of MILES transmitters are depicted on previous page.

MILES devices are not required when an AN/PSX-1 AN/PSX-1 (CIDDS) device has been mounted on the weapon. The AN/PSX-1 performs the MILES training device function.



MILES 2000 Transmitter positioned on an M16A2 Rifle.
(Consult your local TASC for detailed mounting instructions and supporting offset target data)



MILES 2000 Transmitter positioned on an M4 Carbine, with M203 attached.
(Consult your local TASC for detailed mounting instructions and supporting offset target data)

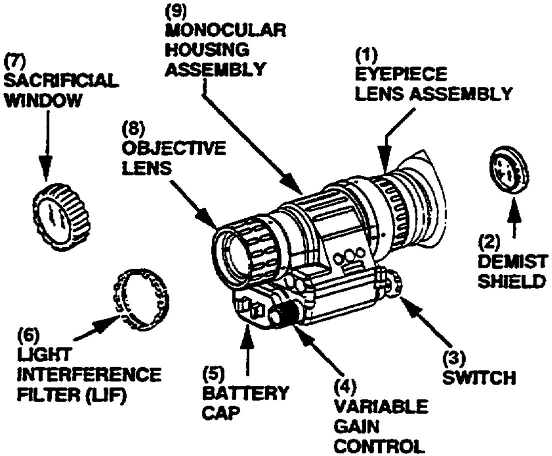


MILES 2000 Transmitter positioned on an M249 SAW/LMG.
(Consult your local TASC for detailed mounting instructions and supporting offset target data)



MILES 2000 Transmitter positioned on an M240B Medium Machine Gun.
(Consult your local TASC for detailed mounting instructions and supporting offset target data)

AN/PVS-14, Monocular Night Vision Device



Monocular Night Vision Device and Accessory Items.

Batteries: BA-3058/U (x2) or AA 1.5Vdc Lithium L91 (x2)

AN/PVS-14 Operating Instructions
(TM 11-5855-306-10, 15 Mar 97)
NOTE

The AN/PVS-14 can be used in conjunction with a collimated dot aiming device mounted on the forward mounting rail. The brightness control for the aiming device should be set at or near it's minimum setting.

Perform the following procedures for weapon mounted operation:

1. Ensure that the batteries are installed per paragraph 2-6, TM 11-5855-306-10.
2. Assemble the small arms mounting adapter to the monocular per paragraph 2-15, step 1 and 2, TM 11-5855-306-10.
3. Mount the monocular with adapter onto the Ml 6/M4 receiver rail per paragraph 2-15, step 3 and 4, TM 11-5855-306-10.
4. Rotate the diopter adjustment ring for the clearest view of the image intensifier screen.
5. Adjust the objective lens focus (2, Figure 2-1) while observing an object until the sharpest image is obtained.

INFRARED (IR) ILLUMINATOR OPERATIONS

The IR illuminator is a light that is invisible to the unaided eye for use during conditions of extreme darkness. However, the light from the illuminator can be detected by the enemy using night vision devices.

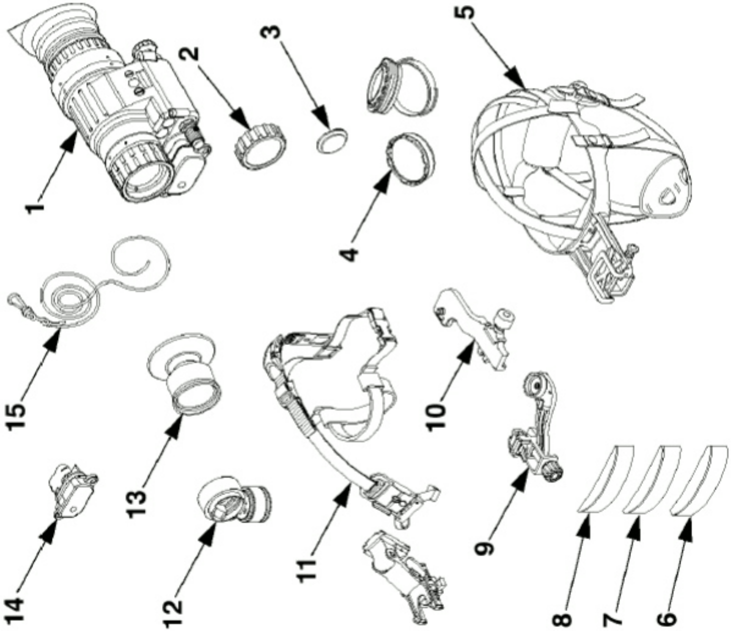
NOTE

The purpose of the IR illuminator is for viewing at close distances up to 3 meters when additional illumination is needed.

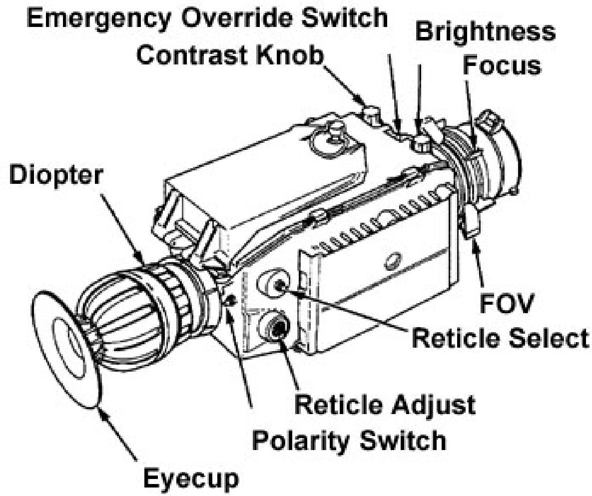
(1) Pull the *RESET/OFF-ON-IR/PULL* switch knob out and rotate clockwise to the IR position. With the monocular held to the eye, observe that a red light appears in the eyepiece. This indicates that the IR illuminator is operating.

(2) For momentary IR, turn the RESET/OFF-ON-IR/PULL switch clockwise (without pulling) past the ON position. Observe that a red light appears in the eyepiece.

AN/PVS-14 Monocular Night Vision Device
(Component List)



Item No	Nomenclature	Part No./NSN
1	Monocular Assembly	5855-01-432-0524
2	Window, Sacrificial	5855-01-246-8271
3	Lens, Infrared Receiver	5855-01-444-1230
4	Filter, Infrared Light	5855-01-379-1410
5	Headset Assembly	5855-01-246-8266
6	Browpad Assy, Thick	5855-01-297-7847
7	Browpad Assy, Medium	5855-01-355-8600
8	Browpad Assy, Thin	5855-01-355-8599
9	Adapter, Headset	5965-01-444-1216
10	Bracket, Mounting	5340-01-446-8588
11	Mount Viewer	5855-01-457-2953 or 5855-01-441-0401
12	Compass Assembly	5855-01-381-6052
13	Eyeguard, Optical Instrument	6650-01-444-1229
14	Cover, Battery Retainer (Marines Only)	6160-01-444-1208
15	Clip, Retaining	5340-01-451-7737



Batteries: BA-5347A/U (x1) or BB-2847/U (x1)

AN/PAS-13 Operating Instructions

(TM 11-5855-302-12&P, 1 Jan 97)

1. Turn the BRIGHTNESS knob clockwise to mid-range position to turn on TWS power. (One click will do.)
2. Place eye to eyecup and push until flaps inside eyecup open.
3. Looking at indicators, adjust diopter on eyepiece for best focus.
4. Remove eye from eyecup and wait for cool-down period to complete.
5. Open objective lens cover on telescope.
6. Place eye to eyecup and push until flaps inside eyecup open.
7. Set CONTRAST knob to AUTO or adjust for best scene.
8. Adjust FOCUS on telescope for best picture.
9. Adjust BRIGHTNESS knob for best picture.
10. Using BLK/WHT switch, select polarity as desired.
11. Rotate FOV ring to select WIDE or NARROW field of view as desired.
12. Repeat steps f through k as needed to accomplish mission.
13. Following operation, turn off power by pushing in and turning BRIGHTNESS knob fully counterclockwise to OFF detent position.

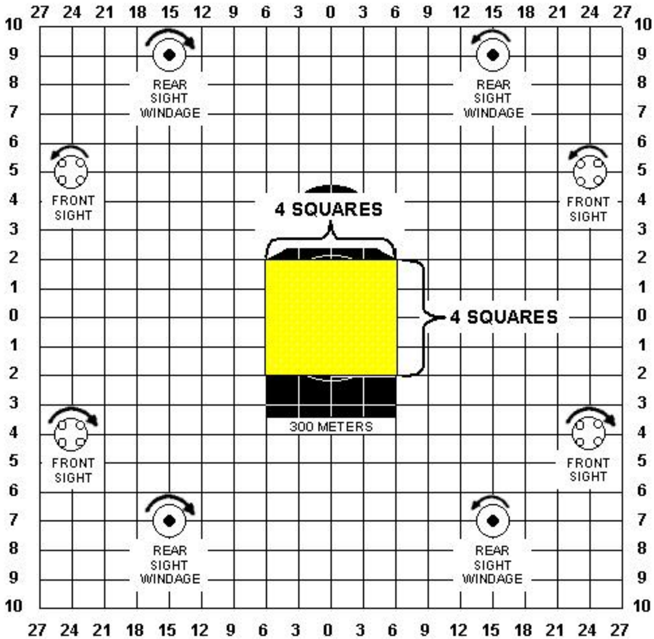
1. Modify an M16A2 25-meter target.

    a. Cut a square hole 4 squares wide by 4 squares high in a M16A2 25-meter zeroing target
    b. Cut out a rectangle from a cardboard box, the same size as the M16A2 25-meter zeroing target (8.5” x 11”)
    c. Estimate 1 inch in from each side of cardboard rectangle and cut out a rectangular hole as shown in Figure 2-31.
    d. Tape cardboard frame to back of modified M16A2 25-meter zeroing target.

2. Affix target to standard E-type silhouette or E-Type thermal silhouette

AN/PAS-13, TWS Target Preparation

25 METER ZEROING TARGET
M16A2/M16A4



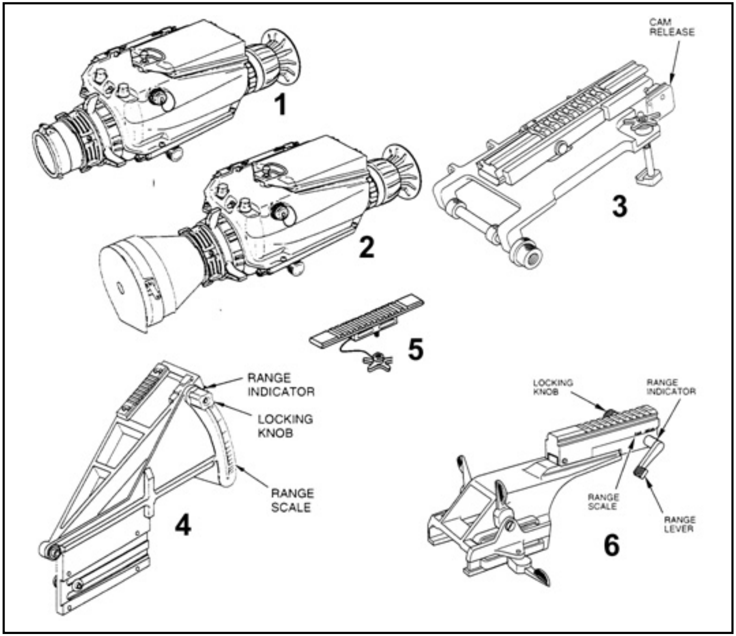
ZERO TARGET DATA FOR M16A2/M16A4 RIFLE

1- FOR ZEROING AT 25 METERS, ROTATE THE REAR SIGHT ELEVATION KNOB TO THE 300 METER SETTING. THEN CLOCKWISE (UP) ONE CLICK PAST THE 300 METER SETTING FOR M16A2 RIFLE, CLOCKWISE (UP) TWO CLICKS PAST THE 300 METER SETTING FOR THE M16A4 RIFLE.

2- AIM AT TARGET CENTER. ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN THE CENTER OF TARGET.

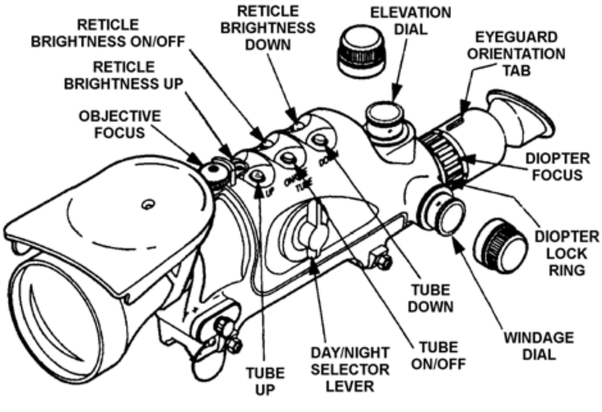
3- AFTER COMPLETING THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB COUNTER-CLOCKWISE (DOWN) ONE CLICK TO THE 300 METER SETTING FOR THE M16A2 RIFLE, DOWN TWO CLICKS TO THE 300 METER SETTING FOR THE M16A4 RIFLE. THE WEAPON WILL BE ZEROED FOR 300 METERS.

AN/PAS-13 Thermal Weapon Sight
(Component List)



Item No	Nomenclature	Part No/NSN
1	Sight Assy, Thermal Med	80063A3170270
2	Sight Assy, Thermal Hvy	80063A3170280
3	Bracket Assy, M60	80063A3170620
4	Bracket Assy, MK19	80063A3260830
5	Bracket Assy, M16A2	80063A317293
6	Bracket Assy, M2	80063A3170570

AN/PVS-10, Sight, Night Vision Sniper Scope (SNS)



SNS Controls and Indicators

Batteries: AA Alkaline (x2) or AA Lithium (x2)

The SNS System is used with the M24 Sniper Weapon System. The SNS System is an integrated day/night weapon system providing both day and night firing capability in a single sight.

- Weight: 4.7 pounds
- Field of View: 3 degrees
- Magnification: 8.5X
- Minimum Range: 25 meters
- Effective Range:
  - Day: 800 meters
  - Night: 600 meters

AN/PVS-10 Operating Instructions
(TM 11-5855-303-12&P, 1 Aug 97)

DAY OPERATION

Adjust Diopter (Eyepiece) Focus

NOTE

Eyepiece focus corrects for the individual sniper's eye and once set should not be reset unless the diopter focus knob is removed. Adjustment of diopter is intended to focus the reticle only, not the image being viewed. **DO NOT** use the eyepiece focus to adjust for a blurred image.

1. Place the objective lens cap over the objective lens, so that you will concentrate on the reticle and not a target.
2. Unlock diopter focus knob by turning locking ring counterclockwise.
3. Adjust eyepiece focus by rotating the diopter focus knob in and out until the reticle is in a clear sharp focus. Maintain some space between the locking ring and diopter focus knob to ensure your diopter setting is not accidentally changed when tightening the locking ring.
4. Secure the eyepiece by turning the diopter-locking ring clockwise.

Adjust Objective (Target) Focus

NOTE

The objective can be focused on objects (targets) from 25 meters to infinity.

1. View an object (target) in the region of interest.
2. Adjust the objective focus by rotating the objective focus knob to obtain the sharpest image of the target. DO NOT adjust the diopter (eyepiece) focus.

Elevation and Windage Adjustment

NOTE

Once the weapon has been zeroed at specific range and the elevation dial set to this range, all other range markings should be considered approximates.

1. Look at the target through SNS and use the mil dot reticle to estimate range to target. In order to see full FOV (40 degrees) insure that the eyeguard is pushed fully inward.
2. Rotate the elevation dial to estimate range. Each click of elevation adjustment equals one (1) minute of angle (MOA).
3. Observe your surroundings and the area around the target and estimate adjustment needed for direction and speed of wind.
4. Rotate the windage dial to adjust for wind. Each click of windage adjustment equals ½ MOA. Rotating the dial down or clockwise moves the strike of the round to the left as indicated on the dial by **L**, and rotating the dial up or counterclockwise moves the strike of the round to the right as indicated on the dial by **R**.

NIGHT OPERATION

The operational controls and adjustments described above for DAY OPERATION are the same for NIGHT OPERATION. The differences are as described below:

NOTE

The ELEVATION and WINDAGE DIALS have a raised pin to help locate Battlesight Zero at night. The pin is on the index line marked "5" on the Elevation Dial, and on the index line marked "0" on the Windage Dial.

NOTE

The TUBE and RETICLE BRIGHTNESS controls are touch type (button) controls and only require pressing to change the setting. Maintaining pressure on the UP or DOWN controls causes the function to go to its maximum or minimum slowly. There may be a short delay before you notice tube or reticle brightness changes. The ON/OFF buttons are flat, the UP buttons are concave with a teat, and the DOWN buttons are concave.

Turn On and Adjust Image Intensifier Tube

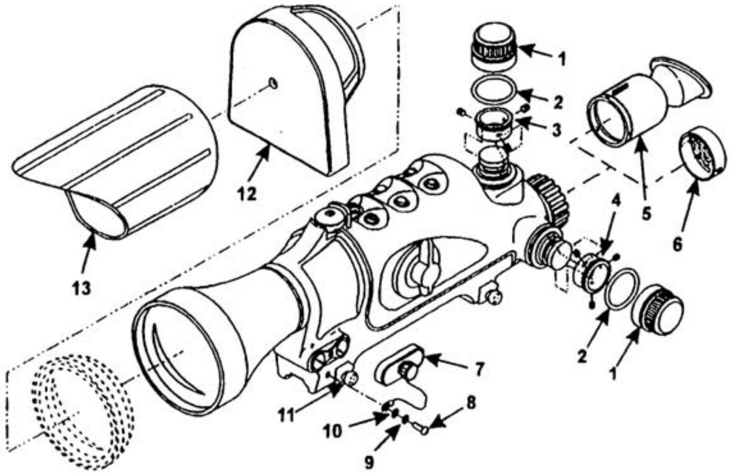
1. Turn mode selector to **NIGHT** mode.
2. Turn tube **ON** by pressing the **TUBE ON/OFF** button.
3. Look at the target through SNS and adjust tube gain by pressing the **UP** or **DOWN** buttons to obtain a best image of the target.

Turn On and Adjust Reticle Brightness

1. Turn **ON** and adjust Tube as specified above.
2. Turn reticle brightness **ON** by pressing the **RETICLE BRIGHTNESS ON/OFF** button.
3. Look at the target through SNS and adjust reticle brightness by pressing the **UP** or **DOWN** buttons to your preference.

AN/PVS-10 Sniper Night Sight

Component List



TM 11-5855-303-12&P

Item No	Description	Part No/NSN
1	Cover, Dial	5340-01-433-9821
2	Packing Preformed	5330-00-550-7099
3	Dial, Control, Elevation	5355-01-433-8412
4	Dial, Control, Windage	5355-01-434-2816
5	Eyeguard, Optical, Instrument	6650-01-415-2232
6	Cap, Protective	5855-01-455-8025
7	Cap Kit, Battery	6140-01-414-3470
8	Screw, Cap, Socket Hex	5305-00-150-3485
9	Washer, No 4 Flat	5310-01-409-0185
10	Washer, Lock	5310-00-224-0746
11	Mounting Kit, Sight	1240-01-424-8349
12	Cap, Lens	5855-01-423-9921
13	Sunshade	6650-01-437-8852

AN/PSX-11, Interrogator-Transponder Set (AN/PSX-1 (CIDDS))



AN/PSX-1, INTERROGATOR SET (CIDDS)
Description

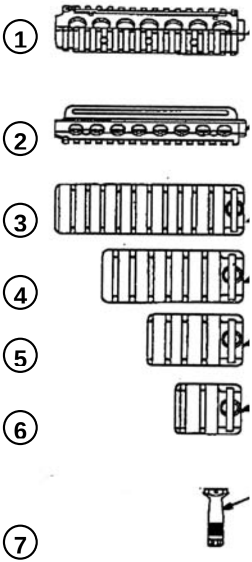
The Combat Identification System for Dismounted Soldiers (CIDDS) is a lightweight weapon mounted friend identification system, to eliminate soldier-to-soldier fratricide. The system will include combat identification, night target pointing capabilities and inter-operate with the Army's Tactical Engagement Simulation (TES) system.

AN/PSX-1 (CIDDS) is a developmental item that is expected to be fielded in the FY 00 –01 timeframe.

"The AN/PSX-1 Technical Manual is currently in draft. The manual is estimated to be published in August 2000 and will appear under the title: TM 11-5895-1678 -12 & P, Operator's and Unit Maintenance Manual, CIDDS, AN/PSX-1 and AN/PSC-12."

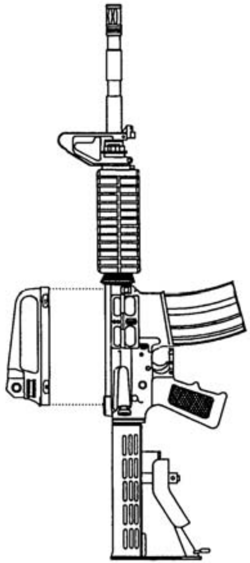
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M4 Carbine Version



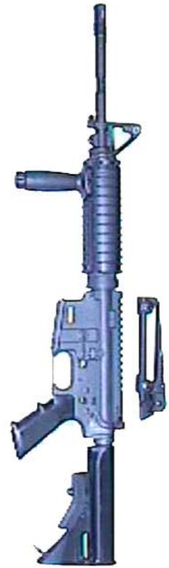
M4 Adapter Rails

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M4/M4A1 Carbine

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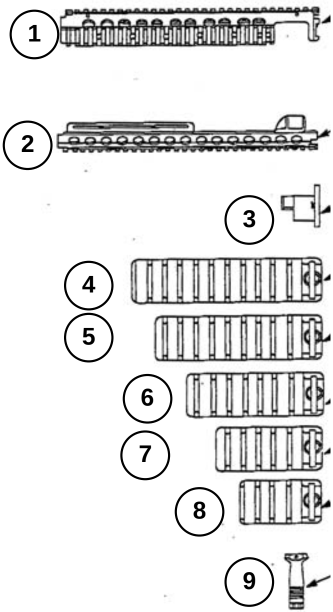


M4/M4A1 MWS

M4 Adapter Rail System
(Component List)

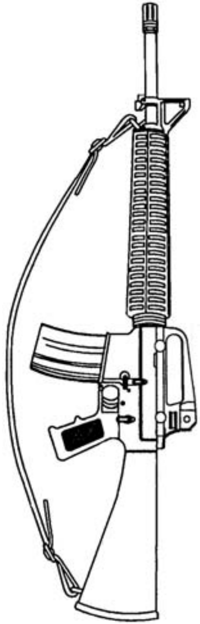
Item No	Nomenclature	Part No./NSN
1	Upper Handguard Assy	1005-01-453-4227
2	Lower Handguard	1005-01-453-1633
3	11 Rib Rail Cover Assy	1005-01-453-5386
4	6 Rib Rail Cover Assy	1005-01-453-4222
5	4 Rib Rail Cover Assy	1005-01-453-4223
6	2 Rib Rail Cover Assy	1005-01-453-4228
7	Vertical Pistol Grip	1005-01-453-6655

M16 Version Modular Weapon System

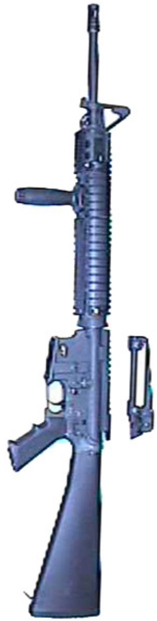


M5 Adapter Rails

+


M16A4 Rifle

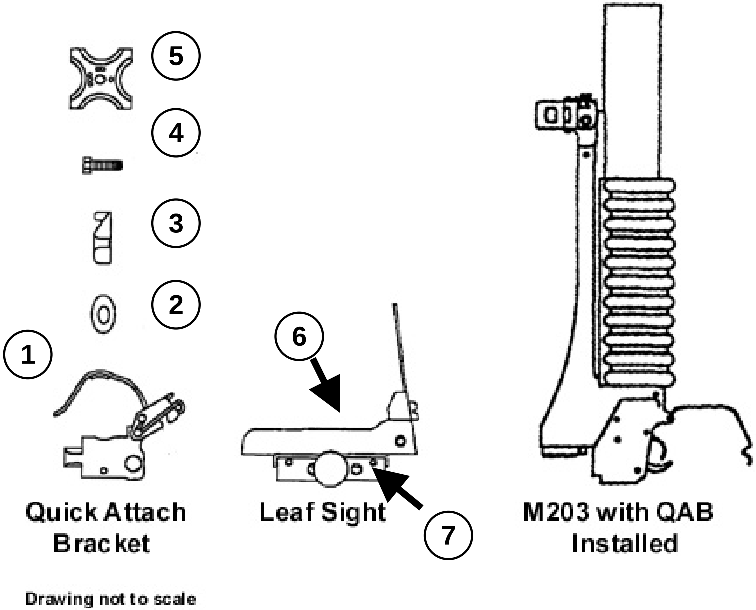
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M16 MWS

M5 Adapter Rail System
(Component List)

Item No	Nomenclature	Part No./NSN
1	Upper Handguard Assy	1005-01-453-4225
2	Lower Handguard	1005-01-453-1635
3	Barrel Stop Assy	1005-01-453-4224
4	11 Rib Rail Cover Assy	1005-01-453-5386
5	9 Rib Rail Cover Assy	1005-01-453-5383
6	6 Rib Rail Cover Assy	1005-01-453-4222
7	5 Rib Rail Cover Assy	1005-01-453-4221
8	4 Rib Rail Cover Assy	1005-01-453-4223
9	Vertical Pistol Grip	1005-01-453-6655

M203 Components-Modular Weapon System





M16A4 Modular Weapon with M203 Installed



M4 Modular Weapon with M203 Installed

M203, MWS Grenade Launcher
(Component List)

Item No	Nomenclature	Part No./NSN
1	Assembly, Left Bracket	1005-01-452-8630
2	Washer, Spring	1005-01-452-9635
3	Base, Right Half	1005-01-453-1634
4	Screw, Cap Socket Head	5305-01-452-9639
5	Shim, Plate	5365-01-453-9287
6	Assembly, Leaf Sight	1005-01-453-5384
7	Assembly, Rail Grabber	19200 12598130

ANNEX D – BATTERY QUICK REFERENCE GUIDE

Accessory	Type Battery						
	AA 1.5Vdc Lithium L91	AA Alkaline BA-3058/U	AA 1.5Vdc Non Specific	BA-5567/U	BA-5347/U or BB-2847/U	BA-5123/U	OE890 Lithium-maganese dioxide
AN/PAQ-4B/C		2*					
AN/PEQ-2A		2					
AN/PVS-4		2**		1**			
AN/TVS-5		2					
M68-CCO							1
M 145 MGO							1
MILES							
AN/PVS-14	2***		2***				
AN/PAS-13					1		
AN/PVS-10	2****	2****					
AN/PSX-1, (CIDDS)						1	

* - Use non-re-chargeable batteries

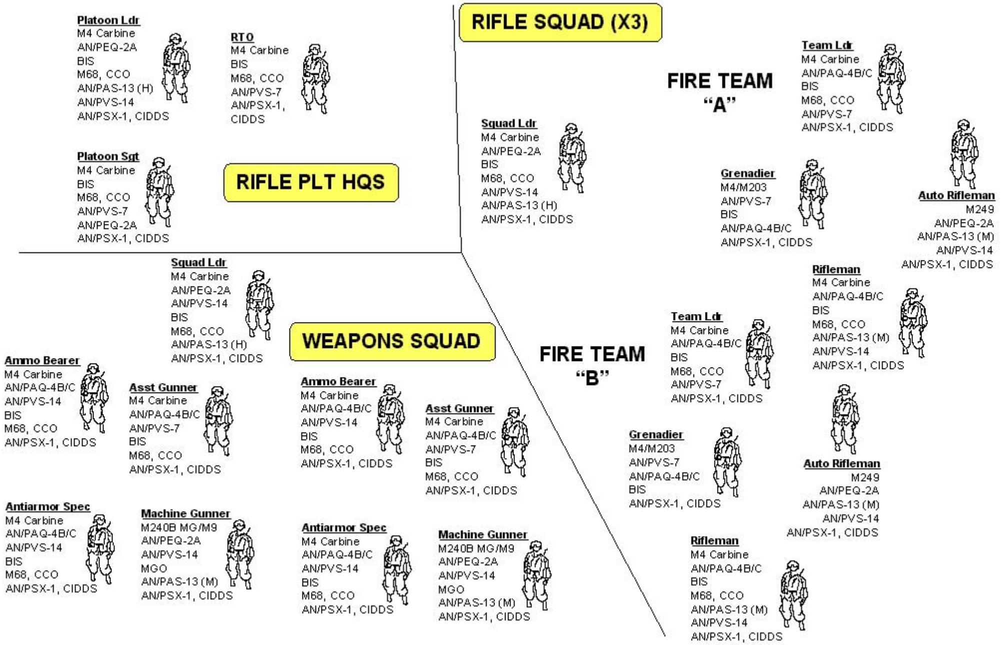
** - Use either one BA-5567/U or two BA-3085/Us.

*** - Use either two AA 1.5Vdc Lithium or two non-specific AA batteries. Do not mix types. DO NOT use two 3.0Vdc batteries as this may result in injury or damage to the equipment.

**** - Use either two AA Lithium or two BA 3058/Us. Do not mix types.

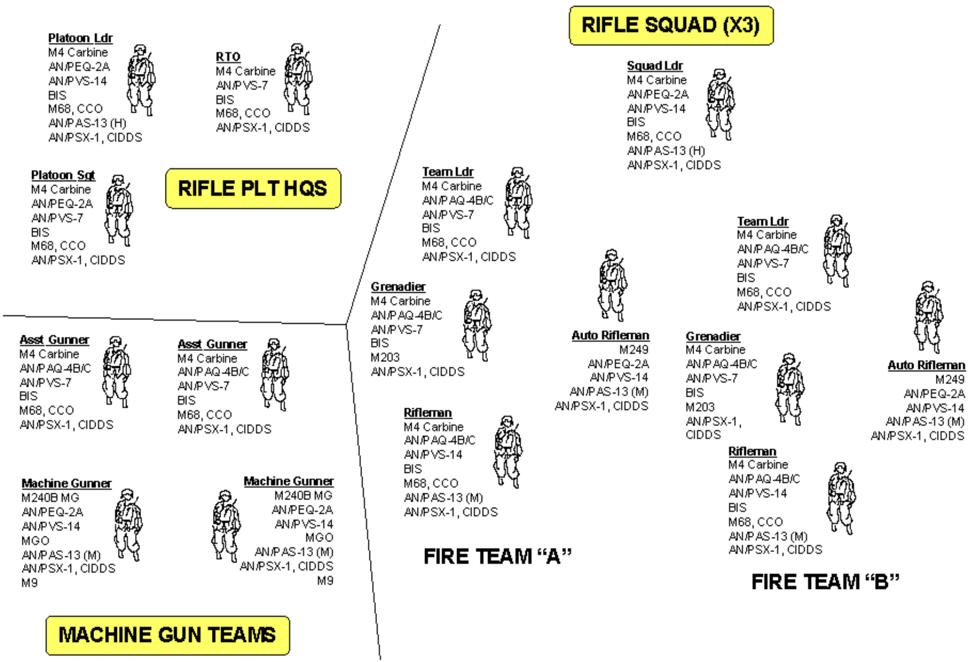
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ANNEX E – PLATOON ORGANIZATION MATRIX
Airborne/Air Assault Infantry Platoon



Weapon/ Device	Plt Ldr	Plt Sgt	RTO	SL	TL	AR	Gren	R	MG	AMG	AA Spec	Ammo
M9									X			
M16A2												
M16A4												
M4	X	X	X	X	X		X	X		X	X	X
M203												
M203A1							X					
M240B									X			
M249						X						
AN/PAQ-4B/C					X		X	X		X	X	X
AN/PAS-13	X-H			X-H		X-M		X-M	X-M			
AN/PEQ-2A	X	X		X		X			X			
AN/PSX-1	X	X	X	X	X	X	X	X	X	X	X	X
AN/PVS-14	X			X		X		X	X		X	X
AN/PVS-7		X	X		X		X			X		
BUIS	X	X	X	X	X		X	X		X	X	X
M68	X	X	X	X	X		X	X		X	X	X
M145									X			

Light Infantry Platoon



Weapon/ Device	Plt Ldr	Plt Sgt	RTO	SL	TL	AR	Gren	R	MG	AMG	AA Spec	Ammo
M9									X			
M16A2												
M16A4												
M4	X	X	X	X	X		X	X		X		
M203												
M203A1							X					
M240B									X			
M249						X						
AN/PAQ-4B/C					X		X	X		X		
AN/PAS-13	X-H			X-H		X-M		X-M	X-M			
AN/PEQ-2A	X	X		X		X			X			
AN/PSX-1	X	X	X	X	X	X	X	X	X	X		
AN/PVS-14	X			X		X		X	X	X		
AN/PVS-7		X	X		X		X					
BUIS	X	X	X	X	X		X	X		X		
M68	X	X	X	X	X		X	X		X		
M145									X			

Mechanized Infantry Platoon (Bradley)

Section A-BFV 1

Gunner
M16A4
BIS
M68, CCO
AN/PSX-1, CIDDS

Platoon Ldr
M4 Carbine
AN/PEQ-2A
AN/PVS-14
BIS
M68, CCO
AN/PAS-13 (H)
AN/PSX-1, CIDDS

Driver
M16A4
AN/PVS-7
BIS
M68, CCO
AN/PSX-1, CIDDS

BFV 2

Gunner
M16A4
BIS
M68, CCO
AN/PSX-1, CIDDS

Brad Cdr
M16A4
AN/PVS-7
BIS
M68, CCO
AN/PSX-1, CIDDS

Driver
M16A4
AN/PVS-7
BIS
M68, CCO
AN/PSX-1, CIDDS

Section B - BFV 3

Gunner
M16A4
BIS
M68, CCO
AN/PSX-1, CIDDS

Brad Cdr
M16A4
AN/PVS-7
BIS
M68, CCO
AN/PSX-1, CIDDS

Driver
M16A4
AN/PVS-7
BIS
M68, CCO
AN/PSX-1, CIDDS

BFV 4

Gunner
M16A4
BIS
M68, CCO
AN/PSX-1, CIDDS

Platoon Sgt
M4 Carbine
AN/PEQ-2A
AN/PVS-7
BIS
M68, CCO
AN/PSX-1, CIDDS

Driver
M16A4
AN/PVS-7
BIS
M68, CCO
AN/PSX-1, CIDDS

1st Squad - Team A

Tm Ldr
M16A4/M203
BIS
AN/PAQ-4
AN/PVS-7
M68, CCO
AN/PSX-1, CIDDS

Grenadier
M16A4/M203
AN/PAQ-4
AN/PVS-7
BIS
AN/PSX-1, CIDDS

Auto Rifle
M249
AN/PEQ-2A
AN/PVS-14
AN/PAS-13 (M)
AN/PSX-1, CIDDS

Rifleman
M16A4
BIS
AN/PAQ-4
AN/PVS-14
M68, CCO
AN/PAS-13 (M)
AN/PSX-1, CIDDS

Antiarmor Spec
M16A4
AN/PVS-7
BIS
M68, CCO
AN/PSX-1, CIDDS

Team B

Squad Ldr
M16A4
AN/PEQ-2A
AN/PVS-14
BIS
M68, CCO
AN/PAS-13 (H)
AN/PSX-1, CIDDS

Tm Ldr
M16A4/M203
AN/PAQ-4
AN/PVS-7
BIS
M68, CCO
AN/PSX-1, CIDDS

Auto Rifle
M249
AN/PEQ-2A
AN/PVS-14
AN/PAS-13 (M)
AN/PSX-1, CIDDS

Auto Rifle
M249
AN/PEQ-2A
AN/PVS-14
AN/PAS-13 (M)
AN/PSX-1, CIDDS

Antiarmor Spec
M16A4
AN/PVS-7
BIS
M68, CCO
AN/PSX-1, CIDDS

RTO
M4 Carbine
BIS
AN/PVS-7
M68, CCO
AN/PSX-1, CIDDS

2nd Squad - Team B

Squad Ldr
M16A4
AN/PEQ-2A
AN/PVS-14
BIS
M68, CCO
AN/PAS-13 (H)
AN/PSX-1, CIDDS

Tm Ldr
M16A4/M203
AN/PAQ-4
AN/PVS-7
BIS
M68, CCO
AN/PSX-1, CIDDS

Auto Rifle
M249
AN/PEQ-2A
AN/PVS-14
AN/PAS-13 (M)
AN/PSX-1, CIDDS

Auto Rifle
M249
AN/PEQ-2A
AN/PVS-14
AN/PAS-13 (M)
AN/PSX-1, CIDDS

Antiarmor Spec
M16A4
AN/PVS-7
BIS
M68, CCO
AN/PSX-1, CIDDS

Team A

Tm Ldr
M16A4/M203
BIS
AN/PAQ-4
AN/PVS-7
M68, CCO
AN/PSX-1, CIDDS

Auto Rifle
M249
AN/PEQ-2A
AN/PVS-14
AN/PAS-13 (M)
AN/PSX-1, CIDDS

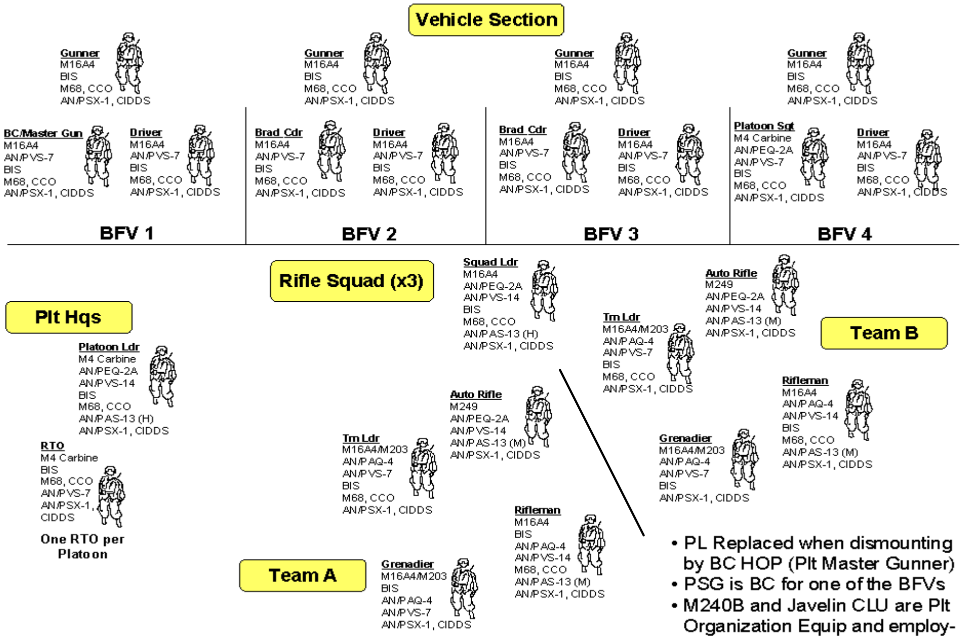
Grenadier
M16A4/M203
BIS
AN/PAQ-4
AN/PVS-7
AN/PSX-1, CIDDS

Antiarmor Spec
M16A4
AN/PVS-7
BIS
M68, CCO
AN/PSX-1, CIDDS

Mech Inf Plt (BFV)

Weapon/ Device	Plt Ldr	Plt Sgt	RTO	SL	TL	AR	Gren	R	AA Spec	Brad Cdr	Brad Gun	Brad Dvr
M9												
M16A2												
M16A4				X	X		X	X	X	X	X	X
M4	X	X	X									
M203					X		X					
M203A1												
M240B												
M249						X						
AN/PAQ-4B/C					X		X	X				
AN/PAS-13	X-H			X-H		X-M		X-M				
AN/PEQ-2A	X	X		X		X						
AN/PSX-1	X	X	X	X	X	X	X	X	X	X	X	X
AN/PVS-14	X			X		X		X				
AN/PVS-7		X	X		X		X		X	X		X
BUIS	X	X	X	X	X		X	X	X	X	X	X
M68	X	X	X	X	X			X	X	X	X	X
M145												

Force XXI (3x9) Mechanized Infantry Platoon



- PL Replaced when dismounting by BC HOP (Plt Master Gunner)
- PSG is BC for one of the BFVs
- M240B and Javelin CLU are Plt Organization Equip and employed based on METT

Weapon/ Device	Plt Ldr	Plt Sgt	RTO	SL	TL	AR	Gren	R	AA Spec	Brad Cdr	Brad Gun	Brad Dvr
M9												
M16A2												
M16A4				X	X		X	X	X	X	X	X
M4	X	X	X									
M203					X		X					
M203A1												
M240B												
M249						X						
AN/PAQ-4B/C					X		X	X				
AN/PAS-13	X-H			X-H		X-M		X-M				
AN/PEQ-2A	X	X		X		X						
AN/PSX-1	X	X	X	X	X	X	X	X	X	X	X	X
AN/PVS-14	X			X		X		X				
AN/PVS-7		X	X		X		X		X	X		X
BUIS	X	X	X	X	X		X	X	X	X	X	X
M68	X	X	X	X	X			X	X	X	X	X
M145												

1. Division XXI Infantry Platoon is organized into 3 squads of nine men each, a vehicle section and the headquarters section.
2. Platoon Leader is replaced when dismounting by the BC HOP (Plt Master Gunner).
3. Platoon Sergeant is the Bradley Commander for one of the BFVs.
4. M240B and Javeling CLU are Platoon Organization Equipment and employed based on METT.

ANNEX F-BORELIGHT DRY ZERO PROCEDURES

Prepared By
US ARMY
Armament Research, Development and Engineering Center (ARDEC)
Small Caliber Weapon Systems Team (AMSTA-AR-CCL-A)
And
Fire Control Development Team (AMSTA-AR-FSF-R)
Picatinny Arsenal, New Jersey 07806

Borelight Dry Zero Procedure for M4 MWS

Use of Borelight

NOTE: Completely familiarize yourself with the use and operation of the Borelight by reading the Borelight Operators Manual. A Borelight manual is supplied with each borelight kit.

WARNING: VISIBLE LASER RADIATION - To reduce the risk of injury AVOID DIRECT EXPOSURE TO THE BEAM - Use Ballistic Laser Eye Protection (BLEPS) when handling/operating the Borelight.

CAUTION: Do not look at laser Borelight through the BLEPS.

Arms Room Borelight Dry Zero Procedure

1. **WARNING** - Before inserting Borelight into weapon, perform Preventative Maintenance Checks and Service (PMCS), clear weapon and visually inspect the chamber to insure that it is empty and no ammunition is in position to be chambered. Additionally, inspect rifle bore and muzzle to assure there are no obstructions. Clean if necessary.

2. Check/Inspect screw on top of rail, rail cross slot T-14, to assure that it is tight

3. Attach fire control device(s) to the weapon and assure device(s) are in their correct location - left rail, right rail, and top rail. (**Note**: rails are labeled T - Top, R - Right and L - Left). Check to confirm that all device(s) are firmly attached.

4. Stabilize the weapon. This can be accomplished by placing the weapon in a rifle box rest, Gun Vise, or rifle holding device (see FM 23-9, dated July 1989, figure C-6, page C-60). If these items are not available, go to step 5. If available, go to step 6.

5. Lay or position weapon on a solid-stable surface such as a heavy table. Choose a weapon position where the weapon is most stable. Ignore weapon cant at this time.
(**Note**: Weapon can be stabilized by using a carpenter's wood clamp set or EZ Hold/ Quick Grip clamps. If these types of items are not available, apply moderate hand pressure on the weapon.) An unobstructed line of sight of 10 meters is required. A 10-meter length of cord is included with the laser Borelight kit. 10 meters is measured from top rail cross-slot labeled "T-14".

6. **WARNING**: DO NOT TURN ON THE LASER BORELIGHT AT THIS TIME. Wipe laser Borelight mandrel with a clean cloth and apply a light film of oil on the mandrel. Insert laser Borelight mandrel in weapon muzzle using a light steady force until the mandrel taper seats in the muzzle. **CAUTION**: Do not apply an excessive inward force to the laser Borelight once the tapered end of the mandrel has seated in the muzzle.

7. <u>ZEROING THE BORELIGHT</u>: This procedure is for zeroing the Borelight to the weapon. This procedure requires a minimum of **TWO** people. One person to stabilize weapon and rotate and adjust the Borelight and a second person at the target board to call out adjustments. **WARNING**: Both individuals **MUST** wear Ballistic Laser Eye Protection (BLEPS). **CAUTION**: Do not look at laser through the BLEPS.

- **DANGER**: DO NOT LOOK DIRECTLY INTO LASER BEAM - DO NOT LOOK INTO LASER THROUGH BINOCULARS OR TELESCOPES OR BLEPS - DO NOT POINT LASER AT MIRROR SURFACES - DO NOT SHINE LASER INTO OTHER INDIVIDUALS' EYES.
- Select/Place the proper 10 meter dry-zeroing target at a 10-meter distance from the top rail screw - rail cross slot T-14.
- For zeroing the Borelight laser, the target board MUST be kept level. Ignore weapon orientation at this time.
- Turn on the laser Borelight. With the help of an assistant, hold a target at 10 meters and place the target board so that the laser dot strikes the center of the laser Borelight dot on the selected target board.

- **Note**: Rotate Borelight tool clockwise, rotating laser Borelight housing counter-clockwise may cause the Borelight to unscrew from mandrel. Slowly rotate the Borelight while watching the dot made by the laser on the target area. If the dot remains stationary the Borelight is aligned and boresighted to the weapon. Go to step 8.

- If the laser dot rotates in a circular pattern, the Borelight windage or elevation or both MUST be adjusted using the following procedures. This procedure can be done at the 10-meter distance or you can move the target in as close as 2 meters.
- Slowly rotate the Borelight one-half turn. Note the new location of the laser dot .
- Adjust the Borelight windage and elevation until the laser dot moves one-half the space from its original location.
- Continue the procedure until the laser dot remains stationary when the Borelight is rotated. If target board was moved closer to the Borelight, move target back to a distance of 10 meters and re-check boresight. If boresight is correct the weapon is ready to be dry-zeroed.

8. <u>ZEROING THE WEAPON</u>: (**Note**: Do Not Touch or Bump Borelight) This procedure is for boresighting the weapon for 300 meter dry-zero.

<u>DANGER</u>: Do not stare at or shine visible laser beam into other individuals eyes.

Use this procedure for the 300 meter Back Up Iron Sight, M68 CCO Reflex Sight and the AN/PAS-13 Thermal Weapon Sight (TWS):

- Remove weapon from box rest, Gun Vise, rifle holding device or flat stable surface.

- From the same 10 meter location place weapon over a sand bag, rucksack or bench rest type stand.

- Manually stabilize the weapon without cant and orient the selected target board in a level-vertical position. (**Note**: Proper positioning of the target is CRITICAL for accurate boresighting results).

- For specific weapon and sight combinations, follow the instructions on the target boards.

- Aim the weapon fire control device(s) at the proper figure on the chart and adjust WEAPON sighting device(s) windage and elevation controls until the laser Borelight is centered on its labeled spot.

- (Optional) Rotate the Borelight one half turn and again aim at the proper device(s) target. If properly boresighted, the laser Borelight spot should still be centered on its spot even after a half turn rotation. If not centered, repeat steps 7.

Use this procedure for the AN/PAQ-4 B/C and the AN/PEQ-2 InfraRed Aiming Lights (**Note**: Night Vision equipment is required):

- Lay weapon flat on a table, over sandbags, or rucksack and manually stabilize the weapon by applying moderate hand pressure down to center of weapon.
- Select proper 10-meter dry-zero target board.
- Orient target board to match orientation of weapon

(**Note**: Proper positioning of the target is CRITICAL for accurate boresighting results).

- Adjust the target board until the laser Borelight is centered on its labeled spot.
- Adjust the windage and elevation controls on the IR Aiming Lights until they are centered on their labeled spot(s).

9. Turn off the laser Borelight tool and REMOVE from weapon. Weapon is now dry zeroed for 300 meters. 300 meter dry-zero should be confirmed by live fire.

10. Repeat steps 1 through 9 for each weapon to be boresighted.

Field Location Borelight Dry Zero Procedure

1. **WARNING** - Before inserting Borelight into weapon perform Preventative Maintenance Checks and Service (PMCS), clear weapon and visually inspect the chamber to insure that it is empty and no ammunition is in position to be chambered. Additionally, inspect rifle bore and muzzle to assure there are no obstructions. Clean if necessary.

2. Check/Inspect screw on top of rail, rail cross slot T-14, to assure that it is tight.

3. Attach fire control device(s) to the weapon and assure device(s) are in their correct location - left rail, right rail, and top rail. (**Note**: rails are labeled T - Top, R - Right and L - Left). Check to confirm that all device(s) are firmly attached.

4. Stabilize the weapon. The recommended/preferred field method is to place/secure the weapon to a rifle holder similar to what is shown in FM 23-9, Figure C-7, and page C-7, dated July 1989. Other alternatives to stabilizing the weapon can be accomplished by placing the weapon over sand bags, rucksack, securing weapon to a sand bagged tripod, placing the weapon over two fallen trees or ammunition cans and stabilizing with sand bags or rucksack If the preferred method or the alternatives are not possible and if vehicles are available go to Step 5, If not go to step 6.

5. Lay or position weapon on a solid-stable surface such as the tailgate or hood of a vehicle or flat surfaces on tracked vehicles. Choose a weapon position where the weapon is most stable. Ignore weapon cant at this time. (**Note**: Weapon can be stabilized by using combinations of sandbags, rucksacks, with ammunition cans or tie down straps from vehicles). An unobstructed line of sight of 10 meters is required. A 10-meter length of cord is included with the laser Borelight kit. 10 meters is measured from top rail cross-slot labeled "T-14".

6. **WARNING**: DO NOT TURN ON THE LASER BORELIGHT AT THIS TIME. Wipe laser Borelight mandrel with a clean cloth and apply a light film of oil on the mandrel. Insert laser Borelight mandrel in weapon muzzle using a light steady force until the mandrel taper seats in the muzzle. **CAUTION**: Do not apply an excessive inward force to the laser Borelight once the tapered end of the mandrel has seated in the muzzle

7. ZEROING THE BORELIGHT: This procedure is for zeroing the Borelight to the weapon. This procedure requires a minimum of **THREE** people. One person to stabilize weapon, a second person to rotate and adjust the Borelight and the third person at the target board to call out adjustments. **WARNING**: All individuals **MUST** wear Ballistic Laser Eye Protection (BLEPS). **CAUTION**: Do not look at laser through the BLEPS.

- DANGER: DO NOT LOOK DIRECTLY INTO LASER BEAM - DO NOT LOOK INTO LASER THROUGH BINOCULARS OR TELESCOPES OR BLEPS - DO NOT POINT LASER AT MIRROR SURFACES - DO NOT SHINE LASER INTO OTHER INDIVIDUALS' EYES.

- Select/Place the proper 10 meter dry-zeroing target at a 10 meter distance from the top rail screw - rail cross slot T-14.

- For zeroing the Borelight laser, the target board MUST be kept level. Ignore weapon orientation at this time.

- Turn on the laser Borelight. With the help of an assistant, hold a target at 10 meters and place the target board so that the laser dot strikes the center of the laser Borelight dot on the selected target board.

- **Note**: Rotate Borelight tool clockwise, rotating laser Borelight housing counter-clockwise may cause the Borelight to unscrew from mandrel. Slowly rotate the Borelight while watching the dot made by the laser on the target area. If the dot remains stationary the Borelight is aligned and boresighted to the weapon. Go to step 8.
- If the laser dot rotates in a circular pattern, the Borelight windage or elevation or both MUST be adjusted using the following procedures. This procedure can be done at the 10 meter distance or you can move the target in as close as 2 meters.

> "Slowly rotate the Borelight one-half turn. Note the new location of the laser dot."
>
> "adjust the Borelight windage and elevation until the laser dot moves one-half the space from its original location."
>
> "Continue the procedure until the laser dot remains stationary when the Borelight is rotated. If target board was moved closer to the Borelight, move target back to a distance of 10 meters and re-check boresight. If boresight is correct the weapon is ready to be dry-zeroed. "

8. ZEROING THE WEAPON: (**Note**: Do Not Touch or Bump Borelight) This procedure is for boresighting the weapon for 300 meter dry-zero.

DANGER: Do not stare at or shine visible laser beam into other individuals eyes.

Use this procedure for the 300 meter Back Up Iron Sight, M68 CCO Reflex Sight and the AN/PAS-13 Thermal Weapon Sight (TWS):

- If using the recommended rifle holder, maintain weapon in its place. If using a flat stable surface, place weapon over a sand bag, rucksack or other recommended alternatives, and stabilize the weapon so that it has no cant.
- Maintaining 10 meter distance from the top rail screw (rail cross slot T-14) to the selected target board, orient the selected target board in a level-vertical position. (**Note**: Proper positioning of the target is CRITICAL for accurate boresighting results)
- For specific weapon and sight combinations, follow the instructions on the target boards.
- Aim the weapon fire control device(s) at the proper figure on the chart and adjust WEAPON sighting device(s) windage and elevation controls until the laser Borelight is centered on its labeled spot.
- (Optional) Rotate the Borelight one half turn and again aim at the proper device(s) target. If properly boresighted, the laser Borelight spot should still be centered on its spot even after a half turn rotation. If not centered, repeat steps 7.

Use this procedure for the AN/PAQ-4 B/C and the AN/PEQ-2 Infra-Red Aiming Lights (Note: Night Vision equipment is required):

- Place weapon on flat surface, over sand bags, or rucksack and manually stabilize the weapon by applying moderate hand pressure down to center of weapon.
- Select proper 10-meter dry-zero target board.
- Orient target board to match orientation of weapon (**Note**: Proper positioning of the target is CRITICAL for accurate boresighting results).
- Adjust the target board until the laser Borelight is centered on its labeled spot.
- Adjust the windage and elevation controls on the IR Aiming Lights until they are centered on their labeled spot(s).

9. Turn off the laser Borelight tool and REMOVE from weapon. Weapon is now dry zeroed for 300 meters. 300 meter dry-zero should be confirmed by live fire.
10. Repeat steps 1 through 9 for each weapon to be boresighted.

Borelight Dry Zero Procedure for M240B MG and M249 SAW with AN/PEQ-2

MachineGun (MG) Borelight Dry Zero Procedure

1. **WARNING** - Before inserting Borelight into weapon, clear Machine Gun (MG), perform Preventative Maintenance Checks and Service (PMCS), and visually inspect the chamber to insure that it is empty and no ammunition is in position to be chambered. Additionally, inspect bore and muzzle to assure there are no obstructions. Clean if necessary.

2. Attach/Mount AN/PEQ-2 IR Pointer to the MG and assure device is tightly secure. On the M240B, the AN/PEQ-2 is attached to the rail on top of the feed cover. On the M249 SAW, the AN/PEQ-2 is attached to the rail on top of the M249 TWS bracket.

3. Stabilize the MG. This can be accomplished by placing the MG on a tripod. If no tripod is available stabilize MG with bipod open and with sand bags or rucksacks.

4. An unobstructed line of sight of 10 meters is required. A 10-meter length of cord is included with the laser Borelight kit. 10 meters is measured from the barrel carrying handle.

5. **WARNING**: DO NOT TURN ON THE LASER BORELIGHT AT THIS TIME. Wipe laser Borelight mandrel with a clean cloth and apply a light film of oil on the mandrel. Insert laser Borelight mandrel in MG muzzle using a light steady force until the mandrel taper seats in the muzzle. **CAUTION**: Do not apply an excessive inward force to the laser Borelight once the tapered end of the mandrel has seated in the muzzle.

6. ZEROING THE BORELIGHT: This procedure is for zeroing the Borelight to the MG. This procedure requires a minimum of **Three** people. One person to stabilize weapon by applying firm pressure downward with two hands on the MG barrel, a second person to rotate and adjust the Borelight and a third person at the target board to call out adjustments. **WARNING**: All individuals **MUST** wear Ballistic Laser Eye Protection (BLEPS). **CAUTION**: Do not look at laser through the BLEPS.

> **DANGER**: DO NOT LOOK DIRECTLY INTO LASER BEAM - DO NOT LOOK INTO LASER THROUGH BINOCULARS OR TELESCOPES OR BLEPS - DO NOT POINT LASER AT MIRROR SURFACES - DO NOT SHINE LASER INTO OTHER INDIVIDUALS' EYES.

- Select/Place the proper 10 meter dry-zeroing target at a 10 meter distance from the carrying handle of the MG barrel.
- For zeroing the Borelight laser, the target board MUST be kept level. Ignore MG orientation at this time.
- Turn on the laser Borelight. With the help of an assistant, hold a target at 10 meters and place the target board so that the laser dot strikes the center of the laser Borelight dot on the selected target board.
- **Note**: Rotate Borelight tool clockwise, rotating laser Borelight housing counter-clockwise may cause the Borelight to unscrew from mandrel. Slowly rotate the Borelight while watching the dot

made by the laser on the target area. If the dot remains stationary the Borelight is aligned and boresighted to the weapon. Go to step 7.

- If the laser dot rotates in a circular pattern, the Borelight windage or elevation or both MUST be adjusted using the following procedures. This procedure can be done at the 10 meter distance or you can move the target in as close as 2 meters.

    - Slowly rotate the Borelight one-half turn. Note the new location of the laser dot .

    - Adjust the Borelight windage and elevation until the laser dot moves one-half the space from its original location.
    - Continue the procedure until the laser dot remains stationary when the Borelight is rotated. If target board was moved closer to the Borelight, move target back to a distance of 10 meters and re-check boresight. If boresight is correct, the weapon is ready to be dry-zeroed.

7. ZEROING THE MACHINEGUN: (**Note**: Do Not Touch or Bump Borelight) This procedure is for boresighting the weapon for 300 meter dry-zero.

DANGER: Do not stare at or shine visible laser beam into other individuals eyes.

Use this procedure for the AN/PEQ-2 InfraRed Aiming/Illumination Lights (Note: Night Vision equipment is required).

- Zeroing from Bipod: Remove MG from Tripod or from sandbags or rucksacks. From the same 10 meter location, shoulder the MG in a prone firing position with bipod legs contacting the

ground, manually stabilize the weapon without cant and orient the selected target board in a level-vertical position. (**Note**: Proper positioning of the target is CRITICAL for accurate boresighting results).

- Zeroing from Tripod: From the same 10 meter location, stabilize the weapon without cant and orient the selected target board in a level-vertical position. (**Note**: Proper positioning of the target is CRITICAL for accurate boresighting results).
- **NOTE**: If MG is zeroed from tripod and fired off the bipod, the center of the cone of fire will be “approximately” 18 inches **high** (+2 MILs) at 300 meters from the center of the target. If the MG is zeroed from the bipod and fired from the tripod, the center of the cone of fire will be “approximately” 18 inches **low** (-2 MILs) at 300 meters from the center of the target.

- Read and follow the instructions on the target boards.

- Aim/Place the borelight at the proper figure on the chart and adjust the windage and elevation controls on the AN/PEQ-2 IR Aiming Lights until they are centered on their labeled spot(s).

- (Optional) Rotate the Borelight one half turn and again aim at the proper device(s) target. If properly boresighted, the laser Borelight spot should still be centered on its spot even after a half turn rotation. If not centered, repeat steps 6.

8. Turn off the laser Borelight tool and REMOVE from MG. MG is now dry zeroed for 300 meters. 300 meter dry-zero should be confirmed by live fire.

ANNEX G - TARGET OFFSET SUMMARY

- Zero Tgt Offsets are expressed as the number of blocks on the target Left(L)/Right(R), Up(U)/Down(D), of the Target's Aim (Center) Point to the Designated Strike Point/Center of Impact.
- Boresight Tgt Offsets are expressed as the number of blocks on the target Left(L)/Right(R), Up(U)/Down(D), of the borelight location (dot).

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
M16A2	AN/PSX-1	M4M16 Bracket Assembly	**4/5**	**300m**	**TBD**	**TBD**
M16A2	AN/PAQ-4B/C	M4/M16 Bracket on top of hand guards	**7/8**	**300m**	**1.5R 0.5U**	**1.85L 2.54U**
M16A2	AN/PAS-13, TWS	TWS Bracket Assy mounted on carrying handle	**11/12**	**300m**	**0.0 8.1D**	**0.0 11.05U**
M16A2	AN/PEQ-2A	M4/M16 Bracket on top of hand guards	**14/15**	**300m**	**1.5L 0.5U**	**Aiming 1.8R/2.4U Flood 2.2L/2.4U**

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
M16A2	AN/PVS-4	AN/PVS-4 Mounting knob on carrying handle	**17/18**	**300m**	**0.0 7.0D**	**0.0 9.4U**
M16A2	M68, CCO	M68 Gooseneck bracket mounted on carrying handle	**20/21**	**300m**	**N/A**	**0.0 5.2U**
M16/ M203	AN/PAQ-4B/C	AN/PAQ-4B/C bracket adapter and AN/PVS-4 mounting knob on carrying handle	**24/25**	**300m**	**1.85R 2.6D**	**1.85L 8.6U**
M16/ M203	AN/PSX-1	AN/PSX-1 mounted on M5 Adapter Rail System	**27/28**	**300m**	**TBD**	**TBD**
M16/ M203	AN/PVS-4	AN/PVS-4 mounting bracket assembly	**30/31**	**300m**	**4.2R 9.8D**	**TBD**
M4/ M4A1	AN/PAQ-4B/C	M4/M16 Bracket on top of hand guards	**34/35**	**300m**	**1.5R 2.5U**	**1.85L 2.54U**

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
M4/ M4A1	AN/PSX-1	Install M4 ARS, place on upper hand guard rail	**37/38**	**300m**	**TBD**	**TBD**
M4/ M4A1	AN/PAS-13, TWS	Upper receiver rail with TWS spacer and grabber	**40/41**	**300m**	**0.0 5.7D**	**0.0 9.4U**
M4/ M4A1	AN/PEQ-2A	M4/M16 Bracket on top of hand guards	**43/44**	**300m**	**1.0L 0.3U**	**Aiming 1.8R/2.4U Flood 2.2L/2.4U**
M4/ M4A1	AN/PVS-4	Upper receiver rail with offset spacer and grabber	**46/47**	**300m**	**0.0 3.4D**	**0.0 7.6U**
M4/ M4A1	M68, CCO	Mounted on upper receiver rail using CCO rail grabber with half-moon shaped spacer installed	**49/50**	**300m**	**N/A**	**0.0 5.63U**

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
M4/ M203	AN/PAQ-4B/C	Mounted on carrying handle, using AN/PAQ-4B/C Bracket Adapter and AN/PVS-4 Mounting Knob Assembly	**54/55**	**300m**	**1.3R 1.9D**	**1.85L 8.6U**
M4/ M203	AN/PVS-4	Mounted on Upper Receiver Rail using rail grabber and offset spacer	**57/58**	**300m**	**0.0 3.4D**	**0.0 9.6U**
M4 MWS	AN/PAQ-4B/C	AN/PAQ-4B/C bracket adapter and rail grabber mounted on left side rail	**62/63**	**300m**	**4.9R 6.1U**	**6.03L 4.25D**
M16 MWS	AN/PAQ-4B/C	AN/PAQ-4B/C bracket adapter and rail grabber mounted on left side rail	**64/65**	**300m**	**6.5R 8.1U**	**6.03L 4.25D**

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
M4 MWS	AN/PSX-1	Mounted on the upper hand guard rail of the M4 ARS	**67/68**	**300m**	**TBD**	**TBD**
M16 MWS	AN/PSX-1	Mounted on the upper hand guard rail of the M5 ARS	**69/70**	**300m**	**TBD**	**TBD**
M4 MWS	AN/PAS-13, TWS	Upper receiver rail with 7/8" spacer and TWS rail grabber	**72/73**	**300m**	**0.0 5.7D**	**0.0 9.4U**
M16 MWS	AN/PAS-13, TWS	Upper receiver rail with 7/8" spacer and TWS rail grabber	**74/75**	**300m**	**0.0 6.0D**	**0.0 9.4U**
M4 MWS	AN/PEQ-2A	AN/PAQ-4B/C bracket adapter and rail grabber mounted on left side rail	**77/78**	**300m**	**4.8R 0.3U**	**Aiming 6.3L/0.35D Flood 6.3L/4.35D**

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
M16 MWS	AN/PEQ-2A	AN/PAQ-4B/C bracket adapter and rail grabber mounted on left side rail	**79/80**	**300m**	**6.0R 2.0U**	**Aiming 6.3L/.35D Flood 6.3L/4.35D**
M4 MWS	AN/PVS-4	Upper receiver with offset spacer and rail grabber	**82/83**	**300m**	**0.0 3.4D**	**0.0 7.6U**
M16 MWS	AN/PVS-4	Upper receiver with offset spacer and rail grabber	**84/85**	**300m**	**0.0 4.6D**	**0.0 7.6U**
M4 MWS	M68, CCO	Upper receiver with CCO rail grabber	**89/90**	**300m**	**N/A**	**0.0 5.63U**
M16 MWS	M68, CCO	Upper receiver with CCO rail grabber	**91/92**	**300m**	**N/A**	**0.0 5.63U**
M4/M203 MWS	AN/PAQ-4B/C	Left rail with AN/PAQ-4 bracket adapter and rail grabber	**102/ 103**	**300m**	**4.9R 6.1U**	**6.0L 4.0D**

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
M16/ M203 MWS	AN/PAQ-4B/C	Left rail with AN/PAQ-4 bracket adapter and rail grabber	**104/ 105**	**300m**	**6.5R 8.1U**	**6.0L 4.0D**
M4/M203 MWS	AN/PVS-4	Upper receiver rail with offset spacer and grabber	**107/ 108**	**300m**	**0.0 3.4D**	**0.0 9.6U**
M16/ M203 MWS	AN/PVS-4	Upper receiver rail with offset spacer and grabber	**109/ 110**	**300m**	**0.0 4.6D**	**0.0 9.6U**
M24 Sniper Sys	AN/PVS-10	Mtd on top of optical rail on the M24	**N/A**		**N/A**	**N/A**
M24 Sniper Sys	Day Optic Sight	Mtd on top of optical rail on the M24	**N/A**		**N/A**	**N/A**

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
M249	AN/PSX-1	Mtd on integral feed tray cover rail w/"L" Bracket	**121/ 122**	**400m**	**TBD**	**TBD**
M249	AN/PSX-1	Mtd on integral feed tray cover rail w/"Open Sight Bracket"	**123/ 124**	**400m**	**TBD**	**TBD**
M249	AN/PAQ-4B/C	Mtd on integral feed tray cover rail with Bracket Assembly	**126/ 127**	**400m**	**1.75R 0.0**	**1.75L 5.39U**
M249	AN/PAQ-4B/C	On top feed tray cover with AN/PAS-13 Mount/bracket with Bracket Assembly	**129/ 130**	**400m**	**0.5R 1.5U**	**1.85L 7.70U**
M249	AN/PAQ-4B/C	On top feed tray cover with AN/PVS-4 bracket and Bracket Adapter	**132/ 133**	**400m**	**2.5R 1.5D**	**4.1L 6.1U**

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
M249	AN/PEQ-2A	Mtd on integral feed tray cover rail with Bracket Assembly	**135/ 136**	**400m**	**2.0L 0.5D**	**Aiming 1.95R/6.49U Flood 2.05L/6.49U**
M249	AN/PEQ-2A	On top feed tray cover with AN/PAS-13 bracket with Bracket Assembly	**138/ 139**	**400m**	**1.8L 2.7D**	**Aiming 1.8R/7.95U Flood 2.2L/7.95U**
M249	AN/PEQ-2A	On top feed tray cover with AN/PVS-4 bracket and AN/PAQ-4B/C plastic Bracket Adapter	**141/ 142**	**400m**	**5.0R 4.0D**	**Aiming .45L/6.5U Flood 4.45L/6/5U**
M249	AN/PAS-13, TWS	Mtd on integral feed tray cover rail	**144/ 145**	**400m**	**0.0 2.75D**	**0.0 8.6U**
M249	AN/PAS-13, TWS	TWS feed tray cover bracket	**147/ 148**	**400m**	**0.0 5.5D**	**0.0 10.05U**

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
M249	AN/PVS-4	Mtd on integral feed tray cover rail	**150/ 151**	**400m**	**0.0 4.3D**	**0.0 10.0U**
M249	AN/PVS-4	On top feed tray cover with AN/PAS-13 bracket	**153/ 154**	**400m**	**0.0 6.6D**	**0.0 11.36U**
M249	AN/PVS-4	On top feed tray cover with AN/PVS-4 bracket	**156/ 157**	**400m**	**2.5R 4.9D**	**2.25L 11.25U**
M249	M145, MGO	Mtd on integral feed tray cover rail	**159/ 160**	**400m**	**N/A**	**0.0 7.9U**
M249	M145, MGO	On top feed tray cover with AN/PAS-13 bracket	**162/ 163**	**400m**	**N/A**	**0.0 2.15U**
M60	AN/PAQ-4B/C	M60-AN/PVS-4 feed tray cover bracket	**167/ 168**	**500m**	**1.5R 8.0D**	**4.0L 14.0U**

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
M60	AN/PEQ-2A	M60-AN/PVS-4 feed tray cover bracket	**171/ 172**	**500m**	**1.5L 8.0D**	**Aiming 4.0R/14.0U Flood 0.0/14.0U**
M60	AN/PVS-4	M60-AN/PVS-4 feed tray cover bracket	**174/ 175**	**500m**	**0.0 13.0D**	**0.5R 14.5U**
M60	AN/PAS-13, TWS	M60-TWS feed tray cover bracket	**177/ 178**	**500m**	**0.0 8.1D**	**0.0 9.0U**
M60	M145, MGO	M60-TWS feed tray cover bracket	**180/ 181**	**500m**	**N/A**	**TBD**
M240B	AN/PSX-1	Mtd using CIDDS "L" Bracket	**185/ 186**	**500m**	**TBD**	**TBD**
M240B	AN/PSX-1	Mtd using CIDDS "Iron Sight" Bracket	**187/ 188**	**500m**	**TBD**	**TBD**

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
M240B	AN/PAQ-4B/C	Mtd with rail grabber on feed tray cover rail with Bracket Assembly	**190/ 191**	**500m**	**1.75R 2.2D**	**1.5L 3.5U**
M240B	AN/PEQ-2A	Mtd with rail grabber on feed tray cover rail with Bracket Assembly	**193/ 194**	**500m**	**2.0R 1.5D**	**Aiming 1.7R/3.71U Flood 2.3L/3.71U**
M240B	AN/PVS-4	Offset spacer and rail grabber on feed tray cover rail	**196/ 197**	**500m**	**0.0 6.2D**	**0.0 6.0U**
M240B	M145, MGO	Mounted on feed tray cover rail with MGO rail grabber	**199/ 200**	**500m**	**N/A**	**0.0 0.0**
M240B	AN/PAS-13, TWS	Mounted on feed tray cover rail with TWS rail grabber	**202/ 203**	**500m**	**0.0 2.3U**	**0.0 8.0U**

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
M2	AN/PEQ-2A	M2--AN/TVS-5 mounting bracket and AN/PVS-4 Bracket Adapter mounted on feed tray cover	**206/ 207**	**500m**	**1.5L 9.5D**	**Aiming 1.95R/9.2U Flood 2.05L/9.2U**
M2	AN/TVS-5	M2--AN/TVS-5 mounting bracket and AN/PVS-4 Bracket Adapter mounted on feed tray cover	**209/ 210**	**500m**	**0.0 10.6D**	**0.0 13.8U**
M2	AN/PAS-13, TWS	M2-TWS feed tray cover bracket	**213/ 214**	**500m**	**0.0 12.8D**	**0.0 16.3U**
Mk19	AN/PEQ-2	M2—AN/TVS-5 mounting bracket and AN/PAQ-4B/C Bracket Adapter mounted on feed tray cover	**217/ 218**	**N/A**	**N/A**	**N/A**

WEAPON	ACCESSORY	MOUNT	PAGE	Range Zeroed To	Zero Tgt Offset	Boresight Tgt Offset
Mk19	AN/TVS-5	M2—AN/TVS-5 mounting mounted on feed tray cover	**220/ 221**	**N/A**	**N/A**	**N/A**
Mk19	AN/PAS-13, TWS	TWS Bracket installed on TWS mount on Mk19	**224/ 225**	**N/A**	**N/A**	**N/A**

ANNEX H - ACRONYMS AND ABBREVIATIONS

	- A -
AR	Automatic Rifleman
AR	Army Regulation
ARTBASS	Army Training Battle Simulation System
ASL	Authorized Stockage List
ATG	Anti-Tank Gunner
ATGA	Anti-Tank Gunner, Assistant
	- B -
BII	Basic Issue Items
BIS	Backup Iron Sight
BN	Battalion
	- C -
C3	Command, Control and Communications
CCO	Close Combat Optic
AN/PSX-1 (CIDDS)	AN/PSX-1, Combat Identification for the Dismounted Soldier (CIDDS)
CO	Company
	- D -
DS	Direct Support
	- E -
EW	Electronic Warfare
	- G -
GREN	Grenadier

- H -

HB	Heavy Barrel
HTWS	Heavy Thermal Weapon Sight

- I -

IAW	In Accordance With
ID	Identification
IPR	In-Process Review

- L -

LMG	Light Machine Gun
LW	Land Warrior

- M -

METT-T	Mission, Enemy, Terrain, Troops and Time Available
MGO	Machine Gun Optic
MILES	Multiple Integrated Laser Engagement System
MM or mm	Millimeter
MTWS	Medium Thermal Weapon Sight
MWS	Modular Weapon System

- N -

NCO	Noncommissioned Officer
NVS	Night Vision Scope

- O -

OCIE	Organizational Clothing and Individual Equipment

- P -

PLL	Prescribed Load List

PLT	Platoon
PMCS	Preventive Maintenance Checks and Services
	- R -
R	Rifleman
RTO	Radio-Telephone Operator
	- S -
SAW	Squad Automatic Weapon
SL	Squad Leader
SOP	Standing Operating Procedures
	- T -
TASC	Training and Audiovisual Support Center
T&E	Traversing and Elevation Mechanism
TACSOP	Tactical Standing Operating Procedures
TF	Task Force
TL	Team Leader
TM	Technical Manual
AN/PAS-13 (H/MTWS)	Thermal Weapon Sight
	- U -
UBL	Unit Basic Load

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY	TO CHANGE	TO	MULTIPLY BY
In	Cm	2.540	Cms	In	0.394
Feet	Meters	0.305	Meters	Feet	3.280
Yards	Meters	0.914	Meters	Yards	1.094
Miles	Kms	1.609	Kms	Miles	0.621
Sq In	Sq Cms	6.451	Sq Cms	Sq In	0.155
Sq Feet	Sq Meters	0.093	Sq Meters	Sq Feet	10.764
Sq Yards	Sq Meters	0.835	Sq Meters	Sq Yards	1.196
Sq Miles	Sq Kms	2.590	Sq Kms	Sq Miles	0.386
Acres	Sq Hectometers	0.405	Sq Hectometers	Acres	2.471
Cubic Feet	Cubic Meters	0.028	Cubic Meters	Cubic Feet	35.315
Cubic Yards	Cubic Meters	0.765	Cubic Meters	Cubic Yards	1.308
Fluid Ounces	Milliliters	29.573	Milliliters	Fluid Ounces	0.034
Pints	Liters	0.473	Liters	Pints	2.113
Quarts	Liters	0.946	Liters	Quarts	1.057
Gallons	Liters	3.785	Liters	Gallons	0.254
Ounces	Grams	28.349	Grams	Ounces	0.035
Pounds	Kilograms	0.454	Kilograms	Pounds	2.205
Short Tons	Metric Tons	0.907	Metric Tons	Short Tons	1.102
Miles per Gal	Km per Liter	0.425	Kms per liter	Miles per Gal	2.354
Miles per Hour	Kms per Hour	1.609	Kms per Hour	Miles per Hour	0.621

Small Arms

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